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ABDOMINAL NEPHRECTOMY FOR HYDRO-NEPHROSIS, WITH A REPORT OF TWO OPERATIONS.

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There can be no doubt that the past years have been progressive ones in abdominal surgery; nevertheless, most practitioners who have attempted any operating in this region will have felt, on many occasions, not only lack of precision in diagnosis, but grave difficulties arising during the operative procedures that become necessary in most of these cases. In studying the operative surgery of the kidney, it is interesting to observe that, while 15 or 20 years ago a larger proportion of the operations were performed after an error in diagnosis, during the last few years a correct diagnosis before operation has been the rule, although many exceptions are to be noted. The difficulty in diagnosis, it would appear, is increased in cases of great enlargement of the organ, where the patient, when seen for the first time, presents a tumor filling the whole abdomen. In the two cases of advanced hydro-nephrosis which I am now about to report, the making of a correct diagnosis appears to me to be singularly difficult. This is owing chiefly to the size of the tumor and the great similarity in each to ovarian cyst. In both cases I have to admit an error in diagnosis, and in both I commenced operation on this wrong opinion; whether a second error was committed in treatment I leave to the judgment of the Associa-

tion, as there is diversity of opinion in the profession as to the operation to be preferred in hydro-nephrosis.

Case I.—Mrs. P., aged 31, married six years and the mother of two children; residing in Thamesford, Middlesex County, but a native of England. Parents living and healthy. No family history of ill-health or hereditary disease. Patient below the average in height and weight, and of pale complexion. She gives a history of fair health in childhood, but during the past fifteen years has suffered from pain in the right side, beneath the liver, and before coming to Canada she attended the out-patient department of St. Bartholomew's Hospital, but got no relief from treatment. About the first week of May, 1889, discovered an enlargement in the abdomen, which steadily increased in size. On the 18th of June, five weeks after this, she was admitted into St. Joseph's Hospital and presented a letter from her family physician, Dr. McWilliam, who had examined her and made the diagnosis of ovarian cyst. There was dulness in the median line, fluctuation, and resonance in the flanks. The measurement greatest below the umbilicus; distance from umbilicus to iliac spines equal on the two sides. The tumor occupied all the abdomen from the pubes to the sternum, but the patient said she thought it was more to the right side at first; no tumor could be felt in the pelvis. Examination of the heart, lungs and liver negative. Catamenia regular; uterus normal in size and movable; specific gravity of urine 1028, no albumen or sugar. The patient was carefully examined by Drs. Moore, Macarthur and Waugh, and the diagnosis of Dr. McWilliam confirmed. I wrote him saying the disease appeared to be ovarian, but the tumor seemed to me to be a little higher up than other cases I had operated upon. On June 20th chloroform was given, an incision made in the median line, and an enormous cyst of the right kidney discovered, which, fortunately, had no adhesions to surrounding parts. The incision was enlarged upwards, the intestines drawn toward the left side, the peritoneum divided over the tumor, and enucleation commenced. The ureter was tied and cut off. Much difficulty was experienced in securing the vessels and separating the upper end of the tumor from surrounding

parts. At this point in the operation the cyst burst and a considerable quantity of fluid escaped into the abdomen. This had a peculiar urinous odor, but was quite clear. The abdomen was sponged out with warm water, the edges of the peritoneum adjusted over the raw surface, and the wound stitched up in the usual manner with silk; no drainage tube was used, and the sublimate gauze dressing was secured with plaster and a binder of flannel. All went well for the first week, the sutures were removed on the eighth day, and the wound found united; the highest temperature recorded up to this time being 101½°. On the tenth day the temperature reached 103, later 104½, with occasional chills and delirium at night, hay odor of the breath, and for almost three weeks her life was in considerable danger. On the twenty-first day, fearing that an abscess had formed, I passed the aspirator needle beneath the 12th rib into the abdomen, but nothing came through; after this recovery was slow, but continuous, and the patient was able to leave the hospital on the 1st of September and attend to her duties.

Case II.—Mrs. T., aged 43, a widow, and the mother of seven children; residence, Goderich. Admitted to St. Joseph's Hospital July 11th, 1889, and gave the following history:—Always had good health and led an active life; never confined to bed except during her confinements; six months ago the abdomen commenced to enlarge, and this had continued to the time of admission; there never had been any pain, but the tumor now began to cause discomfort from its size. Two physicians in Goderich had made an examination, she informed me, and both had recommended operation. The abdomen showed a large, fluctuating tumor extending from the pubes to the ribs, dull in the median line, resonant in the flanks; measurement greatest below umbilicus. No tumor could be felt in the pelvis. Examination of the heart, lungs and liver negative. Uterus movable and natural in size. Catamenia regular. The tumor was much larger than in the case just related. The patient was well nourished and rather stout in figure. Drs. Woodruff, Waugh and McArthur were called in consultation, and as the last case of mistaken diagnosis was still in the hospital, a very careful

examination was made in order particularly to exclude hydro-nephrosis. The diagnosis of ovarian cyst was made and an operation recommended. Urine: specific gravity 1030; no albumen or sugar. On July 13th chloroform was given and the usual incision made in the median line. The opening revealed an enormous cyst of the left kidney, filling the whole abdomen. The peritoneum over this was incised and the tumor enucleated, the ureter cut off and tied, and the usual vessels secured with silk ligature. The operation, as in the last case, was difficult, and the wall of the cyst gave way, notwithstanding all my care, and the clear fluid escaped, much of it getting into the abdominal cavity. Warm water was passed into the abdomen, and the peritoneum adjusted over the bud of the tumor. There were no adhesions, but the bleeding was considerable and difficult to control. The patient had no bad symptoms, the silkworm gut sutures were removed on the eighth day, and the wound found healed. On the tenth day the temperature rose to 103°, pulse quickened, tongue became coated, and the abdomen swelled. These symptoms continued, the temperature varying somewhat, but always being above normal. This was followed by a discharge from the vagina, described by the sister on duty as composed of blood and pus, and very offensive. Injections of carbolized water were ordered twice a day, and nothing more was heard of this symptom. After this improvement took place slowly, and the patient had completely recovered by Sept. 10th, when she left the city for her home.

In the early stage, before an abdominal tumor is noticeable, hydro-nephrosis has to be diagnosed from renal abscess, peri-nephritic abscess, and extravasation of blood. When of small size, it may be mistaken for hydatid or serous cyst of the liver or spleen. Between hydro-nephrotic and pyo-nephrotic tumors the diagnosis is sometimes impossible. In some cases of the latter disease, however, pus appears in the urine. The treatment being similar in the last two, an error in diagnosis would not endanger the life of the patient, and no doubt in many cases suppuration is set up from accident, so that pyo-nephrosis is simply an advanced stage of hydro-nephrosis. The greatest

difficulty is experienced in excluding ovarian cyst, and my object in this paper is to show that this is well-nigh impossible—I mean in advanced cases where the cyst fills the whole abdominal cavity, as in the last two operations reported. In the first we have a history of pain in the side and an enlargement commencing, the patient tells us, in the lower part of the abdomen, a little to the right side. This enlarges in the short space of four or five weeks until it fills the abdomen. The measurement is greater below umbilicus, and the distance from this point to iliac spines is equal on the two sides; fluctuation, dulness on percussion in the median line, and resonance in the flanks; examination by the sound shows a healthy and movable uterus. In the first case, the smaller of the two, the tumor appeared to me to be just a little higher than the average ovarian cyst, but this was accounted for by an elongated pedicle. The absence of the cyst by vaginal examination is also accounted for in the same way. The rapidity of its growth, its size, and the absence of urinary symptoms, together with a healthy condition of the urine, point to ovarian tumor, and negative, one might almost say, hydro-nephrosis. I cannot think that the mistake in diagnosis is due to carelessness. The first case had been examined by Dr. McWilliam, who sent her to me, then by three other physicians of experience and reputation, and all came to the same conclusion. The plea of carelessness certainly cannot be argued in the second case. This one came into the hospital while the first was in bed, and not yet recovered from the operation. She was examined by two of the consultants called in the previous case. I mentioned to them to be sure and exclude hydro-nephrosis this time, and the examination was made with the probability of cyst in the kidney constantly in view and the diagnosis of ovarian tumor made. In this case, the history of an enlargement of six months' duration, giving rise at first to no symptoms, and later on only those of pressure; measurements alike from umbilicus to iliac spines, girth greater below umbilicus, fluctuation distinct, dullness in the median line, and resonance in the flanks; uterus movable, normal in size, and healthy; tumor filling the whole abdomen from pubes to ribs, and reach-

ing to the same position on both sides. I find from reading that there are at least fifteen cases on record in which hydro-nephrosis or simple renal cysts have been mistaken for ovarian tumors, and laparotomy performed on the erroneous diagnosis. Out of twelve cases in women collected by Morris, no less than seven were diagnosed as ovarian, and three of the seven submitted to abdominal section on the strength of this wrong opinion. From a study of the literature of this subject, and my experience of these two cases, I arrive at the conclusion that a diagnosis between advanced hydro-nephrosis and ovarian cyst is, to the the average practitioner, an impossibility. If I am correct in taking this view, it has an important bearing on the subject of treatment, for the question the surgeon has to answer is not what is the best treatment for hydro-nephrosis, but, the abdomen having been opened on the supposition that an ovarian tumor exists and a cyst of the kidney discovered, what are we to do next? Shall we close the abdomen and call it an exploratory incision, or can we not stitch up the wound after opening the cyst and drain from the loin? Can we perform nephrectomy by enucleating the tumor? I must confess that I am not partial to exploratory incisions for diagnostic purposes in private practice. My patients call them operations; the friends imagine a mistake has been made, and say "they do not want to be cut open to satisfy the curiosity of the doctor." I am of opinion, therefore, that something should be done to get rid of the disease. If the distension increases, death will result from the effects of pressure on neighboring organs, from rupture into the peritoneum or suppression of urine or uræmia. I might here revert to the means of different operators in the treatment of hydro-nephrosis in general.

"Puncture," writes Knowsley Thornton, "may also be tried as a means of treatment, though I believe there is no good evidence that cures are often effected by it. It should be performed by the aspirator, the needle being introduced far back in the loin to avoid risk of puncturing the colon, the peritoneum, or allowing extravasation of urine into the cavity of the latter. If relief follows, it may be repeated from time to time; but if

the fluid reaccumulates, some more radical operation must be undertaken. I have completely failed in two cases with incision and drainage, and I believe that nephrectomy is the proper treatment in all cases which do not improve after one or two tappings." Mr. Morris writes thus of drainage: "This practice has been very successful, and ought certainly to be adopted when aspiration fails and before nephrectomy is dreamt of. In a few cases a complete cure will be effected and the wound will quite close; in the majority, however, a fistula must be expected, and gives very little inconvenience to a person of ordinary intelligence and patience."

Barker writes "that free drainage for hydro-nephrosis is not much more successful than aspiration, and not devoid of risk. Of course a larger sac will be in a better position to contract if freely and continuously drained than if occasionally emptied, but the time consumed in the process of drainage, the necessity often lasting for months, for constantly changing the wet dressings; again, there is always the risk of suppuration in the sac, with subsequent septic infection." Mr. Barker, therefore, favors early nephrectomy. Jacobson recommends that in healthy patients nephrectomy should be had resource to after two months trial of drainage, providing the other kidney be healthy.

Spencer Wells, in his work on abdominal tumors, records the case of a woman, aged 43, who was operated upon at the Samaritan Hospital for supposed ovarian tumor and an enormous renal cyst found. This was tapped, but no attempt at removal was made. The wound was closed and the patient died thirty hours after the operation.

The authors quoted are evidently discussing the treatment of hydro-nephrosis in the early stages, when a diagnosis is possible, when we are able to say not only that a cyst of the kidney exists, but likewise the side of the body it is on. In the class of cases under consideration we approach the subject from a very different standpoint. We are expecting to find an ovarian tumor, and an incision has been made in the median line at least four inches long, preparation has been made for an operation, and the patient has gone under chloroform, with the understanding, no doubt, that she will soon be rid of her disease.

Under these circumstances two operations might suggest themselves to the operator,—" nephrectomy" by somewhat enlarging the incision and at the same time an examination of the other kidney to ensure its soundness, or " drainage" by incision in the loin. It might be well for the operator to consider the age and general constitution of the patient in weighing the merits of the operations and deciding which to perform. The immediate danger of nephrectomy is much greater than after ovariotomy, and is certainly much more to be dreaded than tapping from the loin and stitching up the abdominal wound. In one case, however, the disease is removed, the patient rid of the useless organ, and recovery complete. In the other, a cyst is being drained which is larger than the patient's head, with little prospect of a complete cure ; at least there remains a fistulous opening, the patient requires to wear a urinal, there is always the fear of suppuration being set up and septic infection following, and the danger of lardaceous disease from the former is not to be lost sight of. In either case we must constantly bear in mind the fact that the patient has only one kidney, which renders any operation more dangerous to life.

On looking up the literature of hydro-nephrosis, I find that about one-third of the cases are congenital. The affection is due to obstruction somewhere between the kidney and meatus urinarius. It is most commonly situated in the ureter. Among the cases mentioned are twists or contractions of the ureter, impacted calculus, stricture of the urethra, enlarged prostate, tumors of the ovary, bladder or uterus. Of 32 cases recorded by Roberts, the cause was found to be impacted calculus in the ureter in 11. From the records of post-mortems in the Middlesex Hospital, it appears that in every eighteenth case there was sufficient hydro-nephrosis in one or both kidneys to be mentioned in the report. Although the disease is quite common, the proportion of cases in which the enlargement of the organ is sufficient to form an abdominal tumor is very small. The fluid is usually clear and almost odorless, but there are many exceptions to this rule. The disease is twice as frequent in females as males, occurs at any period of life, and affects each kidney

about equally, but may occur in both. The quantity of fluid is sometimes enormous. One case is reported where the woman measured six feet four inches around the abdomen, and the cyst contained thirty gallons. The enlargement may lessen in size or intermit from escape of fluid into the bladder. Morris says: "Up to the present time there have been 27 nephrectomies for hydro-nephrosis, of which 16 were abdominal and 10 lumbar. Of the 16 abdominal cases 7 recovered, and of the lumbar the same number. In one the character of the operation is not stated. Four of the fatal cases were diagnosed ovarian, and three of the successful abdominal cases were also diagnosed ovarian or broad ligament cysts." It would appear, therefore, from reading this author, that up to the present time abdominal nephrectomy has been more fatal than lumbar. We must recollect, however, that most of the abdominal cases were ones of mistaken diagnosis; in fact, cases supposed to be ovarian, and therefore advanced cases at a time when any operation, abdominal or lumbar, would have been hazardous. I am firmly of opinion, however, that in these cases where a large tumor fills the whole abdomen, the lumbar operation cannot be entertained, as it is difficult or impossible to say which kidney is the diseased one and the cyst too large for this plan of operation. In closing this very imperfect survey of the subject of hydro nephrosis, I would beg leave to submit the following conclusions:—

(1) That in a large proportion of cases of advanced hydro-nephrosis, where the tumor fills the abdomen, it is impossible for the average operator to say whether there exists a cyst of the kidney or an ovarian tumor.

(2) That supposing hydro-nephrosis is suspected, it is not possible to say which kidney is the diseased one.

(3) The last two propositions being admitted, it follows that, in all those advanced cases, incision in the loin and drainage cannot be advocated, as the surgeon is unable to say which side ought to be incised.

(5) In view of these difficulties in diagnosis, it would seem preferable to make an incision in the linea alba and complete the diagnosis with the hand. If the case be a cyst of the kidney,

carry the incision upwards and complete the operation by enucleating the tumor.

(5) This operation is suitable alike for hydro- or pyo-nephrosis, the danger, of course, being greater in the former.

(6) That abdominal nephrectomy by the median incision is a difficult operation, owing to the high position of the tumor and the close relations of the aorta and vena cava, the large size of the renal vessels, and the fact that the tumor is behind both layers of the peritoneum.

(7) If a correct diagnosis could be made, I am of opinion that abdominal nephrectomy by incision along the linea semilunaris is the best operation for the class of cases under consideration; but I do not think it possible to remove such large cysts by incision in the loin.

(8) In the case of a weak patient, or one advanced in years, supposing the abdomen to have been opened, it might be the safer procedure to open the cyst and drain from the loin. This operation is safer than nephrectomy, but it usually leaves a permanent fistula.

(9) In view of the symptoms observed in the two cases reported, I think it would be advisable, in completing the operation of abdominal nephrectomy, to secure drainage by making an opening in the loin.

PERI-TYPHLITIC ABSCESS.

By A. Groves, M.D., Fergus, Ont.

Peri-typhlitic inflammation, although comparatively rare, is still of sufficient frequency to render its consideration a matter worthy the attention of every member of the profession. It is only in recent years that the nature of the disease, its importance and appropriate treatment have become thoroughly understood. My limited experience, I am quite aware, gives me no right in any way to speak with the voice of authority, seeing that I have had only seventeen cases, of which thirteen went on to the formation of abscess and were operated on, the remaining cases having terminated in resolution; but my experience may be of some slight value to the profession, for I have had the good fortune never to have lost a case, either as a result of operation or for the want of an operation. It is very commonly supposed that inflammation in the cæcal region results solely from foreign bodies having become impacted in the vermiform appendix, but although this is often a cause, it is by no means the sole or possibly even the most frequent cause. Peri-cæcal inflammation may arise from impacted masses in the appendix, from hardened fæces in the cæcum, as a result of typhoid ulceration, and probably as a result of external injury.

The diagnosis is not usually difficult, for the increase of temperature, pain and localized swelling are usually sufficient to indicate the nature of the disease. Tenderness is not, as a rule, very marked, although always present. The general abdominal tenderness of peritonitis is wanting. In a case of this kind the appropriate treatment is perfect rest and thorough emptying of the bowels if there seems to be impaction in the cæcum, opiates to relieve pain, and, locally, warm applications if they are grateful to the patient. Bleeding, blistering and the inunction of mercurial ointment are positively injurious, and can meet no useful indication. Should resolution not take place speedily, or should the symptoms point to the probable formation of pus, an operation should be at once undertaken, for delay is, in such a case, particularly dangerous. It must be admitted that no posi-

tive rule can be laid down as to the proper moment for operating, that being a matter altogether for the judgment of the surgeon, but there can be no question that an early operation is in every case best.

In my opinion, the point at which the opening should be made is of the utmost importance, in order to avoid opening into the abdominal cavity. I know many surgeons of the present day speak lightly of opening the peritoneum, and too often have the courage of their convictions, but, although I have no morbid dread of intra-peritoneal surgery, nevertheless I retain a lingering respect for peritoneal integrity, and am old-fashioned enough to think that, other things being equal, it is better to keep outside the peritoneum. The rule I follow is to make an incision about two inches long and not more than one inch to the inner side of the anterior superior spinous process of the ileum, dissecting down, using the surface of the bone as a guide until the abscess cavity is reached. I have found no advantage from the use of a drainage tube, nor does there seem to be anything gained by elaborate antiseptic precautions; at the same time, if an iodoform odor tends to reassure the surgeon, it will be found quite harmless. I have never had the misfortune of opening the peritoneum in these cases, possibly because I have been especially careful to avoid it, nor have I ever had to perform a laparotomy for the purpose of washing pus from a ruptured abscess out of the cavity of the peritoneum; but if the abscess had burst into the peritoneal cavity, an immediate laparotomy is imperatively demanded, for on this depends the sole hope of saving the patient.

In my cases there were but four where there was actual communication between the bowel and the abscess at the time of the operation, and in one of these cases about four square inches of gangrenous intestinal wall came away, rectal injections flowed freely from the wound, and fæces were discharged, yet in a few weeks the parts were entirely healed and the patient now enjoys perfect health. In no case have I seen any after ill results of the disease, nor have I known any case in which abscess developed a second time.

Retrospect Department.

QUARTERLY RETROSPECT OF MEDICINE.

By R. L. MacDonnell, M.D.,
Professor of Clinical Medicine in McGill University; Physician to Montreal General Hospital.

Paroxysmal Hurry of the Heart.—Rapid action of the heart has latterly been attracting some attention both in England and upon the continent. Dr. Samuel West dealt with the subject in a paper read before the Medical Society of London, March 10th, 1890. The affection is not common and its literature is scanty. Dr. Bristowe, in the tenth volume of *Brain*, describes it as "recurrent palpitation of extreme rapidity in persons otherwise apparently healthy." In a typical case, the patient, who is usually between thirty and forty, is suddenly seized with an attack in which the heart acts with very great rapidity, beating often from 200 to 300 times in the minute. This may be the only symptom and the patient may not be incapacitated, but equal to all usual work, and even capable of considerable mental and bodily exertion. More commonly there is associated with the rapid action of the heart more or less violent palpitation, and at times also cardiac pain, both of which symptoms may be so severe as to completely invalid the patient for the time. The attacks come on with or without any assignable cause, though they may be produced by worry or work; but when the attack is past the patient may be enabled to resume business. The paroxysms vary in duration, from a few minutes to several hours or even occasionally days, while the intervals between them vary also irregularly. The general tendency is for the intervals to diminish and the attacks to increase in frequency.

Although in some cases organic disease of the heart exists, in the majority there is no definite evidence of organic lesion. During the attack the apex may be displaced, the cardiac dulness increased, and murmurs sometimes of great intensity may be heard, but all the physical signs disappear when the attack is over and no signs of cardiac lesion persist. It seems due to some organic lesion, more probably muscular rather than valvular.

However this may be, many of the patients die with cardiac symptoms: some suddenly, as if of cardiac syncope; others of gradual cardiac failure, and that, too, in cases where there is no evidence of valvular disease.

The evidence is not yet sufficient to determine the usual course of the affection. Dr. West is of opinion that many cases recover, certainly that in some cases many years pass by without any return of the symtoms. However this may be, the affection is one that is compatible in many cases with active work for years. Dr. West illustrates his paper by the records of several cases. In case I there were attacks of palpitation, frequently without assignable cause, the pulse beating 200 and 250 to the minute, temporary musical murmur, no definite cardiac lesion, and a history of rheumatic fever. Recovery ensued to an extent sufficient to enable the patient, who was a railway porter, to resume his occupation. The most interesting feature of the case was the condition of the heart. There was evidence of great dilatation, and accompanying the dilatation and disappearing with it a very remarkable musical murmur, which agreed with no valvular lesion. The condition is suggestive of a muscular lesion, which the previous history of rheumatic fever also renders not unlikely. The gradual, somewhat slow, recovery, as well as the influence which nitrite of amyl had upon the attacks, point in the same direction.

The second case reported by Dr. West was that of a commercial traveller, who was brought to St. Bartholomew's Hospital almost in a condition of collapse, with a pulse of 300 to the minute. The attack was sudden, and there came on with it severe pain in the præcordium, in the back between the shoulders and down the left arm, and almost a condition of collapse supervened. The cardiac dulness was a little increased and the apex displaced to just a little outside the nipple line in the fifth space. The right border did not extend beyond the left edge of the sternum. No murmur. Nitrite of amyl gave gradual relief, and the pulse fell to 88. A systolic murmur became audible as the attack passed off. After some time two murmurs could clearly be made out, one at the apex audible also in the axilla,

and occasionally faintly at the angle of the scapula, the other at the right base and propagated upwards into the neck. Both murmurs were systolic in time and no diastolic murmur could be detected. This was the third attack and it lasted about nine hours. But the first attack, eight years ago, had continued over several months, and the second over four weeks, so that the attacks appear to be getting less severe and less frequent. There was a possible history of syphilis, which is a point worthy of attention, since it is also present in one of Dr. Bristowe's patients, and it may suggest the lesion in some of the cases.

In the third case, the attack followed an effort to hurry, and the patient was one of the hospital nurses. There was no evidence of actual disease of the heart, but a tendency to hysteria was present.

The affection is one of the middle period of life, for out of the twelve cases recorded by Dr. Bristowe and by Dr. West, ten occurred between the ages of twenty-five and fifty. The liability of the two sexes is the same. Is there an organic lesion of the heart or not? A nervous affection it certainly must be, but the question is whether this nervous irritability is itself due to organic disease of the heart. Dr. Bristowe regards it as a functional disease, and this conclusion is supported by the only post-mortem obtained. A good deal may be said on the other side. Extreme rapidity is rare in ordinary palpitation, and in exophthalmic goitre, where palpitation and rapidity of action are so common, it is unusual for signs of cardiac failure to appear. If there be a lesion, it is probably of the myocardium. In several of the cases there is a history which would explain such a lesion. Two of Dr. West's patients had had rheumatic fever and the second probably syphilis. The lesion may well be, in some cases, a form of chronic interstitial myocarditis consequent on past rheumatic pericarditis, or in others on syphilis, being thus related to fibroid disease of the heart. Proof is impossible, and such a conclusion must at present remain a matter of opinion.

Essential Paroxysmal Tachycardia.—Under this title Bouveret deals with the same subject in the *Revue de Médecine.**

* P. 753, Sept. and Oct., 1889.

He describes the affection as a morbid entity, characterized by attacks of inflammation coming on without appreciable cause, and in the course of which the pulse-beats number 250 or more to the minute. The attacks begin suddenly and the pulse reaches its maximum all at once, and when the attack is over it drops suddenly to its normal rate. At the moment, in almost every instance, the patient experiences either a sensation of something having given way in the chest or a sharp access of pain. Some attacks are short and some long, the first lasting from several days to a week, and the latter lasting several weeks or months. Short attacks are of more frequent occurrence than are the long ones. In some patients but two or three attacks occur during the year; in others a greater number. The frequency of the attacks increases with age.

In the short attacks the patients, in the beginning, do not suffer to an extent sufficient to compel them to relinquish their occupation. There is moderate dyspnœa, 25 to 30 respirations to the minute; slight cyanosis; right lateral decubitus is preferred. As the attack becomes prolonged there is a perceptible increase in the volume of the heart, while there is turgescence of the jugulars, dysuria with albuminuria in some cases, enlargement of the liver, of the spleen, and all the signs of pulmonary congestion, which if extreme is accompanied by hæmoptysis.

In a case observed by Bensen, compression of the vagi in the neck was followed by a diminution in the number of cardiac pulsations.

In 11 cases collected by Bouveret there was a fatal termination in 4; in two of these death was due to syncope, and in two others to asystolic collapse.

Under ordinary circumstances this affection occurs in patients bodily or mentally overworked, apart from any cardiac affection, tobacco or other poisoning, or from Graves' disease or any reflex tachycardia. Bouveret believes that it depends upon some lesion of the pneumogastric nerve, because after death no alteration was found either in the cardiac muscle or in the nerves ending there.

In *La France Médicale* (Dec. 12th, 1889) Sollier records a case of paroxysmal tachycardia, in which sudden death occurred.

In the *Medical News* (April 26th, 1890), Dr. Robison, after giving an abstract of Bouveret's paper, records a case occurring in his own practice in Chicago.

Throat Complications in Typhoid Fever.—One of the very common complications in typhoid fever is deafness, which has been attributed to the extension of the pharyngeal catarrh to the Eustachian tube. Landgraf (*Centralblatt für Klinische Medicin*, No. 17, quoted in the *Lancet*, May 24th, 1890) has made observations on 166 patients suffering from typhoid, of whom 46 were males and 70 females. Of the former 28 had throat complications, and the latter 13. The mortality of those thus affected was 17 per cent. in the males and 23 per cent. in the females, whilst in those who had no such complications, the mortality was 8.2 in men and 8.5 in women. The most common condition was a simple catarrh of the pharynx and larynx. Follicular tonsillitis, described by some writers, Landgraf had never seen amongst his patients. On the other hand, in a great number of cases, he had noticed small superficial ulcers on the soft palate, epiglottis, uvula, and mucous membrane of the lips. These ulcers generally appeared during the second week, did not affect the follicles of the tonsils, and healed more or less rapidly from the edges without the formation of scabs. He does not consider that they have any prognostic signification. Whether in severe cases they are to be considered as diphtheritic in nature or not is an open question. As regards the larynx, Landgraf found that this organ was attacked in one-half of the patients. Usually there was merely a simple catarrh which showed itself as a partial reddening of the mucous membrane, especially on the inner surface of the arytænoids and epiglottis. This catarrh began between the end of the first week and commencement of the third. It was accompanied by very few subjective disturbances, was followed by desquamation of the epithelium, and generally passed away in a few days. In most severe cases yellowish-gray flecks appeared, usually on the edge or under surface of the epiglottis or on the arytænoids. These flecks consisted, in two cases in which scrapings were taken, of collections of micro-organisms (staphylococcus pyogenes flavus et aureus). These

flecks, like the catarrh, rapidly disappeared. In other cases more or less œdema occurred, which chiefly affected the edge of the epiglottis, and led to deep ulceration and denudation of the cartilages. There was great pain on swallowing. The course was almost always favorable, though deformities or scars of the epiglottis occasionally remained. Another and more serious affection of the larynx consisted in erosion of the mucous membrane, not only of the epiglottis, but also of the vocal cords, the arytæno-epiglottidean folds, and the posterior wall of the larynx. Deep ulceration occurred very often with the formation of a membrane like diphtheritic membrane, and not uncommonly led to perichondritis and stenosis of the larynx. Landgraf considers that this necrosis of the mucous membrane is a local gangrene, produced, not by pressure, but by blood stasis. In favor of this he asserts that this complication only occurred in those severe cases where there was great loss of strength, and that therefore the administration of stimulants was urgently called for. Occasionally typical typhoid ulcers were seen similar to and occurring as those met with in the intestine. These were situated on the posterior wall of the larynx, on the under-surface of the epiglottis, and on the false vocal cords. They were characterized by having undermined edges, which were swollen and dark in color, and by the thick, uneven floor. Perichondritis was always secondary, appeared only during the convalescent stages of the disease, and attacked the arytænoid. Landgraf has twice observed paralysis of the laryngeal muscles. In one case there was paralysis of the left vocal cord, and in the other the crico-arytænoidens posticus was affected.

Primary Cancer of the Liver.—Dr. Hansemann points out (*Berliner Klinische Wochenschrift*, No. 16) that the occurrence of primary cancer of the liver is not so frequent as is often admitted; that in many cases the primary source of the hepatic disease has been overlooked. Leichtenstern, he says, from records embracing the period between 1845 and 1872, gives 72 instances of primary to 358 of secondary cancer. Hansemann himself, in the Berlin records from 1870 to 1889, finds among the 258 cases of hepatic cancer thence compiled twenty-five of

primary cancer of the gall-bladder, two of primary cancer of the larger bile-ducts, and only six of true primary cancer of the liver, and two of these are doubtful. He shows that in literature two distinct types of hepatic adenoma have been described ; one in which the structure of the bile capillaries is reproduced, and the other in which the cells are larger and the tubules resemble those of the tubuli contorti of the kidney. Schüppel was of opinion that such adenomata could become converted into carcinoma, as would appear to have been the case in the instance recorded by Hansemann. One must admit, however, a form of "malignant" adenoma, for there are cases in which there have been metastatic deposits, the tumor penetrating the veins. Besides this adenomatous type, there are two other forms of primary hepatic cancer. One is in the form of large solitary masses, from which secondary deposits form in the vicinity of the organ. The other and less rare type is the infiltrated form, which to a certain extent stimulates cirrhosis. Both these conditions arise in the hepatic cells.

Pyothorax Subphrenicus.—Scheurlen* records two new cases of pyothorax subphrenicus, and he has collected 32 similar histories. Pyopneumothorax was present in 13 cases ; in 15 cases the disease was situated in the left side, 19 times on the right. In but 17 cases an ante-mortem diagnosis had been made ; operative measures had been taken in 15 cases, in 6 of which recovery took place. The causes of the abscess were : ulcer of the stomach, 11 cases ; ulcer of the duodenum, 4 cases ; inflammation and perforation of the vermiform appendix, 6 cases ; wound causing sanguineous effusion, which ultimately became purulent ; abscess of the liver or suppurating, 3 cases ; abscess of the spleen, 2 cases ; and lastly, in three cases no appreciable cause could be discovered.

As a matter of clinical diagnosis, it frequently happens that the primary lesion is unrecognized, in which case the pyothorax appears to arise spontaneously. The diagnosis between a pyothorax upon the diaphragm and one below that structure presents

* Charité Annalen, p. 158, 1890 ; also in Revue des Sciences Médicales, April 15th, 1890.

serious difficulties. Empyema ordinarily follows a pneumonia, or tuberculosis, or the puerperal state. When these causes are absent, the physician should begin to consider the question of subdiaphragmatic abscess. Attention, too, should be paid to the severe pain in the hypochondrium, which is reflected to the shoulder, to the want of proportion between the local and the general symptoms, the physical signs corresponding to a moderate pleuritic effusion, while at the same time there is very high fever, prostration, and delirium. In more than half the cases there is secondarily an exudative pleurisy.

Empyema.—Renvers* thus classifies the various cases of empyema which he has observed :

1. *Metapneumonic empyema.* In a case of pneumonia, seven days of normal temperature having elapsed since the crisis, purulent effusion was discovered. In another case pus was found in the pleura almost immediately after the pneumonia, and fever did not show itself until the 17th day. Pneumococci were found in the pus of both these effusions. The pus was thick, creamy, with fibrinous flocculi. Thoracotomy was successful in bringing about recovery in all the three cases observed by the writer.

2. *Metapneumonic empyema complicated.* Here staphylococci and streptococci are found, as well as the pneumococci. In these cases complications other than pneumonia exist, and the empyema has no tendency to spontaneous cessation.

3. *Empyema consecutive to a chronic affection of the lung.* Two alcoholic patients of very cachectic habit were attacked suddenly with purulent pleurisy. In the first there existed dilatation of the bronchi with fœtid bronchitis. The second was the subject of chronic bronchitis. When the thorax was opened a large cavity was found enclosing several ounces of pus ; this cavity communicated by a fistulous opening with a second cavity which contained about the same quantity of pure pus.

4. *Empyema arising in connection with septicæmic conditions.* These occur specially in connection with puerperal diseases, and are often double.

5. *Empyema in connection with tuberculosis.* The majority

* Revue des Sciences Médicales, 15th April, 1890.

occur in this connection. In many cases, though, one does not find micro-organisms in the pus, particularly Koch's bacillus, even in those cases in which a cavity discharges itself into the pleura. Pyopneumothorax may occur in these circumstances. The staphylococcus may be found as a complication of tuberculosis. Metapneumonic empyema may occur amongst tuberculous patients.

RETROSPECT OF PATHOLOGY.

By Wyatt Johnston, M.D.,
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Diphtheria.—A number of important papers have recently been published on the bacteria found in connection with this disease. Since Loeffler announced the occurrence of a specific bacillus in all cases of true diphtheria, the matter has received special attention at the hands of bacteriologists. A point of special interest was to ascertain the nature of primary croupous laryngitis, and to learn if the local membranous inflammations occurring in the intestine, bladder, skin, etc., were really diphtheritic in their nature. Paltauf and Kolisko (*Wiener Med. Wochensch.*, No. 8, 1889) found Loeffler's bacilli present in the cases of membranous croup which they examined, and therefore regard both croup and diphtheria as infective. In local diphtheritis in other situations they were unable to find these bacilli. The bacilli, when present, were always accompanied by streptococci and staphylococci.

R. Wurtz and H. Bourges (*Archives de Med. Exp.*, May, 1890) examined the bacteria present in nine cases of diphtheritis accompanying scarlatina. Of these, in seven the diphtheritic condition appeared early (*precoce*) and in two late (*tardive*). In the seven cases where it appeared early streptococci were found, occurring in chains, resembling, but not absolutely identical with, those found in erysipelas. In six of the cases they were accompanied by pyogenic staphylococci; none presented Loeffler's bacilli. In two cases where the diphtheria set in late (6th and 9th day), Loeffler's bacilli were found in both instances.

T. M. Prudden of New York (*Amer. Jour. Med. Sci.*, May,

1889) examined 24 cases of diphtheria in children, either primary or in connection with suppuration, scarlatina, measles, etc. He did not find Loeffler's bacilli in a single instance, although the examination on this point was directed with the greatest care. In two cases of scarlatinal diphtheria staphylococcus aureus alone was found. In the remaining 22 cases streptococci were found in both local lesions and the viscera. Where the condition was complicated by pneumonia, chains of cocci were found in great abundance in the exudation. These cocci were absent from the throat and tonsils of 31 healthy children not exposed to infection, but among 40 children in good health, but living in a hospital where the disease was epidemic, the cocci were found in twelve instances. Inoculation with these organisms did not produce in animals any disease fairly analogous to the diphtheria occurring in the human subject.

In the researches already quoted it will be noticed that there is a diversity of opinion as to the nature of the pathogenic agent in this disease, and the experiments on animals do not appear conclusive. The induced disease was always a sort of septicæmia, the local manifestations being far from characteristic and the inoculated organisms being found after death in the blood and internal organs.

Some recent experimental researches are far more satisfactory from being in harmony with what we know of the disease in man. Roux and Yersin (*Annales de l'Inst. Pasteur*, Dec., 1888) investigated 15 cases, and found Loeffler's bacillus present in all of them. With cultures of the bacilli they were able not only to induce typical pseudo-membranous inflammations in animals, but these inoculations were followed by paralyses corresponding to those occurring after diphtheria in man. Further, they were able to obtain by filtration a toxic substance from their cultures capable of producing this paralysis without the aid of the living bacteria. This poison was thought to be of the nature of a diastase or ferment. A small dose of the poison given subcutaneously produced local inflammation (without pseudo-membrane) followed by congestion and hemorrhages in the internal organs, especially the kidneys. The paralytic action of the

poison where very small doses were given was often greatly delayed, which may serve to explain the late onset of the corresponding symptoms in man.

These results have since been confirmed and extended by V. Babes of Bucharest (*Virchow's Archiv*, Bd. 119), who found Loeffler's bacilli present in all cases. He was able also to produce typical diphtheritic inflammation in rabbits by inoculation in the conjunctiva, either with pure cultures or simply with small particles of diphtheritic membrane. Pure cultures, filtered through a Pasteur-Chamberland porcelain filter, yielded a clear fluid free from micro-organisms, but containing a toxin differing from any hitherto described, and apparently analogous with the substance found by Roux. Injection of 30 ccm. of this fluid subcutaneously in rabbits caused death in 24–48 hours with symptoms of progressive paralysis of the muscles, respiration and heart. When 5–10 ccm. only were injected, the animals lived for several weeks, but usually died with symptoms of a paralysis not unlike that of rabies, commencing by a weakness in the hinder extremity and leading in a few hours to complete paraplegia, followed shortly by paralysis of the heart and respiration. The autopsies showed parenchymatous degeneration of the liver and kidneys, with proliferation of nuclei about the minute blood-vessels. He did not succeed in producing a false membrane by injections of the filtered bouillon cultures, nor with any of the cocci found associated with Loeffler's bacillus. The cocci simply produce inflammation with necrosis, and so prepare the way for the action of the specific poison. In animals which had been inoculated with the bacillus, it was only found after death in the immediate neighborhood of the inoculation, corresponding exactly to what had been observed by Loeffler in human diphtheria. An attempt was made to secure immunity by protective vaccination, but without success, as animals which had survived appeared only to acquire a very slight degree of immunity limited strictly to the very site of the previous inoculation. Lastly, a series of therapeutic and prophylactic experiments were tried, the rabbits' corneæ being treated with various antiseptic agents, either before or after inoculation. It was found,

contrary to the supposition of Roux and Yersin, that carbolic acid in 20 per cent. solution was not only unable to check the formation of pseudo-membrane, but actually, through its irritating effect, predisposed to it. The same was found to apply to 10 per cent. citric and 5 per cent. acetic acid. On the other hand, 1–4000 sublimate and 1–1000 permanganate of potassium, 1–5 alcohol, 1–50 chloral, and 1–20 boracic acid were unirritating and sufficed to check the formation of membrane.

E. Klein of London, whose views were previously at variance with Loeffler's, has recently examined 22 cases of typical pharyngeal diphtheria, finding a bacillus identical with that of Loeffler in every case. In 12 cases he found a bacillus almost identical in appearance and mode of growth, but devoid of pathogenic properties.

Organization of Thrombi.—R. Beneke of Leipzig has published some important results obtained in investigating this obscure subject. It is well known that the blood retained in a vessel between double ligatures may remain fluid for weeks or even months if the operation has been done aseptically, and even if a clot has formed, the length of time which elapses before it begins to organize is very variable. Beneke, without going deeply into the cause of the blood remaining fluid, has studied the conditions which attend the organization of the thrombus. He considers that it is the effect of the intervascular pressure on the cells composing the vessel wall which determines its occurrence or otherwise. When the vessel remains distended with blood between the double ligatures no organization occurs; and, microscopically, the walls of the vessel retain their normal appearance even in the immediate vicinity of the ligatures. On the other hand, if the vessel is collapsed at the time of the ligation, a condition favorable to proliferation of the connective tissue of the vessel wall with the vasa vasorum, at the spot at which organization commenced there was always an overgrowth of the intima, which appeared to take an active part in the process.—(*Ziegler's Beitrage, vol. vii.*)

How far may a Cow be Tuberculous before her Milk becomes Dangerous as an Article of Food?—The elaborate researches

made on this subject by Dr. H. C. Ernst of Boston have recently been published in full (*Transactions American Association of Physicians*, vol. iv). These investigations have been made on a scale and with an amount of precaution rarely met with, and are on that account most trustworthy. It had hitherto been supposed that as long as the udder of a tuberculous cow remained free from the disease the possibility of infection from consumption of the milk was practically nil. It was conceded, of course, that tuberculo-mastitis might be present to such an extent as to infect the milk without giving any external evidences during the lifetime of the animal, though even this was disputed. Dr. Ernst's experiments have led to the startling conclusion that the milk may be highly infectious where no disease of the udder is discoverable after death even with the aid of the microscope. The investigation consisted in microscopic examinations, inoculation of rabbits and guineapigs, and feeding experiments with calves and pigs. The feeding experiments were performed on a farm specially set apart for the purpose by the Massachusetts Society for Promoting Agriculture. To avoid the possibility of accidental infection the whole place was thoroughly disinfected and kept scrupulously clean during the experiments, all utensils being sterilized by heat.

Microscopical Examination—114 samples of milk, taken from 36 cows in various stages of tuberculosis, but all free from affection of the udder, gave positive results in 17 samples from 10 different cows. Tubercle bacilli were actually seen in the milk of 27 per cent. of the cows examined. To ensure this result about 20 cover-glass preparations had to be examined on each sample. Inoculation of 49 rabbits with samples from 13 cows gave positive results in 10 per cent. Inoculation of 54 guineapigs with samples from 14 cows gave 42.8 p.c. of positive results. In the feeding experiments in 13 calves, 41 per cent., and with 5 pigs 40 per cent. became tuberculous. At the time of writing the paper almost all the cows from which the samples were taken had been killed, and though all showed the presence of tubercle in some part of the body, not one showed tuberculosis of the udder. Dr. Ernst concludes that the milk from a cow

affected with tuberculosis in any part of the body may contain the virus whether the udder is affected or not. Unfortunataly that part of the research most interesting from a scientific point of view, viz., the exact anatomical condition of the udder, appears not to have received the same amount of attention given to the preliminary details, and the statements on this point are anything but satisfactory. The practical point that milk may be capable of conveying tuberculous infection when no disease is recognizable in the udder is, however, proved beyond doubt.

On Hypertrophy of the Heart in Bright's Disease.—H. F. Formad of Philadelphia, in the course of 300 autopsies in cases of Bright's disease, found the heart hypertrophied in 62 per cent. of the cases, the left ventricle alone being affected in 34 per cent. and both ventricles in 28 per cent. The condition associated with the greatest degree of hypertrophy were (1) fatty and contracted kidney (late parenchymatous nephritis) occurring in 29 per cent. of the cases of general hypertrophy of both ventricles and 26 per cent. of those where the left ventricle alone was affected, and (2) red granular kidney in 44 per cent. of cases of left and 26 per cent. of symmetrical hypertrophy. The greatest degree of enlargement was found in cases where heart disease was also present, though cases of venous induration were not included. The average size of the heart was 10 oz. in acute Bright's disease, 15 oz. in large white kidney, 14 oz. in fatty, contracted kidney, and 17 oz. in red, granular kidney. Arterial changes (endoarteritis and periarteritis) were found only with the red granular kidney. Cases of senile atrophy were excluded, as were also cases of amyloid kidney. It is stated, however, that with amyloid kidney hypertrophy of the heart occurs as often as in any of the other forms, the absolute weight remaining low because of the originally defective development of the circulatory system in these individuals. An apparently small heart occurring in a scrofulous subject may really represent a considerable degree of hypertrophy.—(*Trans. Assoc. of Amer. Phys., vol. iv.*)

The Connection between Morbid Conditions of the Stomach and those of the Nervous System.—P. Cuffer (*Revue de Méde-*

cine, April 1890) describes four cases of cancer of the stomach where symptoms of bulbar paralysis appeared. He thinks that in addition to temporary reflex cerebral conditions, a permanent organic lesion of the medulla oblongata can be produced through an ascending neuritis of the pneumogastric. No reports of autopsies are given to confirm these views.

QUARTERLY RETROSPECT OF GYNÆCOLOGY.

By T. Johnson-Alloway, M.D.,
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At a recent meeting of the American Medical Association, held at Nshville, Tenn., there occurred an interesting discussion on the occasion of Dr. Werner's paper on *Fistulous Escape of Ligatures after Abdominal Operations.* Dr. Werner advocated good drainage, and it was thought by those present that the drainage tube was not the cause of the ligatures and stump becoming infected and the former cast off. The use of the catgut and silkworm gut for abdominal ligatures were condemned, and English silk was considered the ideal ligature. American silk contained flax and cotton as an adulteration, and was therefore not considered fit for use. It was also considered better in every case to remove both ovaries, though only one seemed diseased at time of operation.—(*Med. News*, May 31st, '90.)

Intestinal Obstruction followiug Vaginal Hysterectomy. (Dr. H. C. Coe, New York.)—Dr. Coe publishes another case of this very interesting and unavoidable accident occurring in his practice. He says: In a paper on this subject, read before the New York Obstetrical Society last October, I stated that if I met with another case of intestinal obstruction "I would operate early or not at all." Unfortunately a similar case *did* present itself seven months after the first, and I followed exactly the course upon which I had previously determined, though with no better success than before. So far as I have been able to learn, this is the tenth case on record, my first being the seventh.

To epitomize Dr. Coe's case, it is only necessary to say that at the operation a coil of intestine prolapsed into the wound on

removal of the uterus and a gauze plug was inserted. The forceps were removed from the broad ligaments in twenty-four hours, but the gauze was not disturbed. On the third day several doses of salts were given without effect. High enemata were also given without satisfactory results. Patient now began to vomit, which soon became fæcal. Laparotomy was performed and several coils of the ileum were detached from the peritoneal wound, when a quantity of flatus escaped per rectum. The patient died fourteen hours later, her temperature remaining below 100°. The autopsy showed the point of obstruction to be at the lower eighteen inches of the ileum. There were evidences of beginning peritonitis. Dr. Coe proposes several questions—

1. Does the occurrence of two cases of intestinal obstruction in rapid succession indicate some serious defect in the technique of the operation ?

2. Is there any way of avoiding the complication ?

3. Is there any way in which the obstruction can be overcome without opening the abdomen ?

4. Why is the secondary operation invariably fatal ?

In discussing the first question, Dr. Coe states that he secured the broad ligaments with the clamp and no ligatures were used, but he also says that it was impossiole to attach the peritoneum to the edge of the vaginal wound on account of lack of working space. Now this latter, we think, would have been better to have been done, and we are surprised at the admission of so skilful an operator as Dr. Coe is acknowledged to be, finding it impossible to pass a needle under such circumstances, no matter how small the vaginal area was.

How now are we to avoid this complication ? I think Dr. Coe has hit the mark in suggesting the complete closure of the peritoneal cavity, attaching the stump of the broad ligaments to the edges of the vaginal wound. If all hemorrhage is secured there can be no more need for drainage than in a clean laparotomy for removal of the appendages.

When obstruction takes place, there is, we should think, nothing to be done but open the abdomen and let the patient take her

chance. Without discussing this very important accident further, all men actively engaged in this branch of surgery must feel grateful to Dr. Coe for his very careful and valuable publication. We cannot imagine a complication to be avoided, which requires more earnestly our serious thought in order to bring about a change in the technique of this operation.

Laparo-Vaginal Hysterectomy.—Dr. Cleveland of New York reports a successful case of much interest. He began the operation by the vagina in the usual way, but finding it impossible to complete the operation by this method, opened the abdomen in the middle line and put the clamps on the broad ligaments from the vagina, using the fingers of the left hand in the abdominal cavity as a guide. Dr. Cleveland in his remarks upon the case suggests the advisability of this combined method being resorted to more frequently than it has been of late. When we know what a trying ordeal it is to remove an enlarged uterus through a small vagina, we feel justified in accepting any feasible method which will render more easy and shorten the operation. We are now convinced that the less the manipulation of parts in the field of operation and the greater the rapidity of action on the part of the operator the better the chances are for the recovery of the patient. These are conditions we are all agreed upon, and it remains an open question how such conditions can best be attained. Dr. Cleveland suggests to first open the abdomen by a small incision low down, then temporarily close this and continue the operation in the vagina until the broad ligament requires clamping. The small wound in the abdomen can then be used to admit the forefinger of the left hand and guide the clamp from the vagina safely over each broad ligament. If, then, the uterus be found too large to remove by the vagina, the abdominal wound can be enlarged and the uterus removed from above. The views of Dr. Cleveland we fully concur in, and think that the little extra danger (if any) to the patient from the small abdominal wound would be fully balanced by the advantages attained in rapidity and perfection of action on the part of the surgeon. This method only applies where the vagina is small, the uterus high up, and cannot be

pulled down. If, however, the vagina is capacious and the uterus easily pulled down, the finger of the left hand can be used as a guide for the forceps through the vaginal opening.—(*Amer. Jour. Obstet.*, May, 1890.)

The Treatment of Suppurative Disease of the Uterine Appendages.—Dr. Boldt of New York publishes a most valuable paper on this important subject (*Amer. Jour. of Obst.*, vol. xxii, No. 3, 1889). The author divides diseases of the uterine appendages into three groups—

1. Those in which the operation is unjustifiable.

2. Where it is wise to watch the patient and keep her under constant treatment, and observe what benefit may be derived.

3. Those cases where delay is not only unadvisable, but dangerous.

Dr. Boldt pleads strongly for early section where the tubes are distended with pus, and cites four cases where he was obliged to operate after rupture had taken place. In the first case of this nature the tubes and ovaries, much enlarged and prolapsed, could be distinctly mapped out by vaginal examination. A diagnosis of double salpingo-oöphoritis syphilitica was made and operation advised provided improvement did not show itself in the course of a few months. One month afterwards this patient, after some violent exertion, was seized with symptoms of general peritonitis. Abdominal section now revealed both tubes to have been distended with pus, but had recently ruptured, pouring a large quantity of fœtid pus into the abdominal cavity. The diseased parts were removed, the abdomen washed out, and a drainage tube inserted. The patient died in collapse sixty hours after operation. This patient had had one child fourteen years before. After this confinement she had had metritis and peritonitis; later she had been infected with syphilis by her husband, and had had off and on attacks of localized peritonitis.

The next case cited was unmarried and never pregnant. She had given the history common to many cases of catarrhal salpingitis, sudden seizures of pelvic pain, high temperature, etc., then temporary improvement, followed by some alarming conditions and gradual emaciation. Examination was difficult on account

of the excessive tenderness, but a soft mass was found to the right of the uterus; the left side of uterus was free. Patient had chills at variable intervals, and it was concluded that the inflammatory attacks were of a septic origin. Operation revealed ruptured pyosalpinx with extravasation of pus into the abdominal cavity. There were extensive adhesions, the separation of which gave rise to such severe hemorrhage that tamponment of the pelvis with iodoform gauze was found necessary instead of the drainage-tube. The gauze was removed in thirty-six hours and a hard rubber double-current drainage-tube inserted; the abdominal cavity was well washed out. The pulse became very feeble, and the cavity was irrigated with a one per cent. solution of chloride of sodium. After this the patient seemed to improve, but gradually sank on the fifth day after operation. At the autopsy diffuse nephritis was present.

The next case reported had a child six months previously. Since the birth of the child she had complained of constant severe pain in right side, also hypogastric pain and intense burning sensation. Both tubes found prolapsed and enlarged; uterus normal in position but very sensitive; cervix bilaterally lacerated. Diagnosis—Double pyosalpingitis due to puerperal endometritis. This patient, after sexual intercourse, was suddenly seized with severe abdominal pain and vomiting; shock was also present. Abdomen was opened within two hours and pus found escaping from an opening in the right tube. Both tubes, equally distended with pus, were removed. The operator washed out the cavity and closed the wound without drainage. The patient made a good recovery.

The fourth case had one miscarriage several months ago; since then had complained of inguinal pains, most severe on right side. Dysmenorrhœa very severe. In the cul-de-sac of Douglas large sausage-shaped masses are felt. The uterus is anterior, the cervix lacerated on left side, and all parts very tender to the touch. Diagnosis—Bilateral puerperal pyosalpingitis. Operation advised. Some time afterwards patient was attacked suddenly with symptoms of peritonitis from ruptured pus-tube (severe pain, small pulse, cold, clammy surface, and high tem-

perature). Abdominal section four hours after attack. Left tube found ruptured and right also ruptured during removal; adhesions not extreme. Abdominal cavity well washed out and wound closed; no drainage. Recovery uninterrupted.

I have reported these very instructive cases of Dr. Boldt's as fully as a condensed review will permit, for I consider them of great interest and value to the general reader. Cases of this nature must occur to every one in practice and the cause of death attributed to idiopathic peritonitis or some such absurd impossibility. The publication of such cases will certainly tend to educate and impress upon the physician the importance of not looking lightly upon such warning attacks as Dr. Boldt describes. All patients of this class, it will be understood, should have their pelvic organs carefully examined directly after a recurrent onset of such symptoms. Extensive adhesions would in this way be avoided, which are really the great point of difficulty to the surgeon and danger to the patient. After a simple laparotomy without adhesions, the patient should be almost certain to recover. Certainly the mortality should not be greater than after an equally well performed trachelorrhaphy. But if a patient is treated for months or years, tiding her through a series of attacks of localized peritonitis, each attack leaving its mark in extensive areas of scar tissue, or waiting until fatal rupture takes place, it makes the work very hard indeed for the surgeon into whose hands the unfortunate patient eventually falls.

Next to gonorrhœal disease, I do not know of a more serious calamity to a woman than an attack of puerperal endometritis, whether following full term parturition or abortion. And I do not know of a condition more lightly looked upon by the general practitioner of medicine once his patient passes out of immediate danger, than this same condition.

The great difficulty of making an absolutely correct diagnosis in these and allied cases of disease of the appendages often comes in the way of obtaining relief for these patients. An examination, for instance, is made, the uterus will be found fairly moveable, though the whole pelvic floor is excessively tender, so much so that it is found impossible to properly map out the parts sus-

pected. An extensive bilateral laceration of the cervix with accompanying ectropion and muco-purulent endometritis. Too much is attributed to this condition of the cervix; it is thought to be the cause of all the present illness of the patient; an operation for its repair is performed, and after a while the patient finding she is no better loses confidence in specialism, and continues for years to suffer or dies suddenly. Much discredit has been thrown upon surgical gynæcology from causes of this nature, and the necessity for ever-increasing care in carrying out our investigations towards a correct diagnosis should stimulate us in this direction. In speaking of methods of investigation adopted in such cases, there is one method of inestimable value which I do not think Dr. Boldt mentions, viz., drawing down the uterus, when not absolutely fixed, by means of a volsellum and passing the forefinger of the left hand high up into the rectum. In this way we can reach beyond the folds of Douglas and can feel distinctly the enlarged thickened tube or ovary when it cannot be felt through the vagina. I have demonstrated the value of this method many times at my clinic in the Montreal General Hospital, where a simple vaginal examination would have afforded me no information. Dr. Boldt's paper is of great value, and will afford interest to every one engaged in the general practice of medicine.

Abdominal Gestation.—CHANDELUX (*Lyon Médical*, No. 2, 1890) performed laparotomy upon a patient fourteen months who had suffered from peritonitis after abortion. Fœtal death had occurred some time before operation. A macerated fœtus was found encysted in the abdomen, the right tube having ruptured. The cyst was sewed to the abdominal walls and the placenta allowed to remain. The cavity was irrigated with 1–25 boracic acid solution and tamponed with iodoform gauze. Six days after operation the greater part of the placenta was carefully detached and the patient recovered in twelve weeks.

Purulent Peritonitis.—FRANKEL and PREDOHL (*Münchener Med. Wochenschrift*, No. 2, 1890) publish the results of their observations in the Hamburg General Hospital. Cultures of the streptococci, when injected into rabbits' ears, produced an

inflammation identical with that which resulted from the injection of the cocci of erysipelas. Other bacteria had the property of decomposing albuminoids and setting free ptomaines, which preserve their virulence long after the bacteria have been destroyed by boiling. There are therefore two kinds of purulent peritonitis—septic and putrid. Peritonitis produced artificially by injection of salt of iron or iodine always produced a serous exudate, and contained no organisms. The practical conclusion arrived at was the great necessity for absolute asepsis in puerperal and laparotomy cases, and early operative interference in cases of purulent peritonitis.

The Danger of Tamponing the Vagina.—Klotz (*Centralblatt für Gynäkologie*, April 12th, 1890) reports two cases of dangerous intra-uterine hemorrhage which occurred in spite of a firm vaginal tampon. In the first case the patient was three months pregnant and had flowed for four weeks. External hemorrhage was entirely checked by a tampon, but a few hours later collapse set in; the uterus was quickly emptied of retained blood-clot, but death took place in one hour. The other case was one of profuse hemorrhage from a uterine fibroid. She was tamponed previous to a laparotomy, but collapsed and nearly died. A large quantity of blood-clot was removed from the uterine cavity and she was saved with much difficulty.

Perineotomy for Removal of Pelvic Tumors. — Sanger (*Archiv f. Gyn.*, Bd. xxxvii, Heft 1) limits this operation to growths situated in the pelvic connective tissue, especially the dermoid variety. With the patient in the lithotomy position, a three-inch incision was made extending from the inner border of the right labium majus obliquely inwards across the perineum to a point one inch behind the anus. The ischio-rectal fossa was opened, the lavater ani muscle divided near its insertion, and lastly, the pelvic fascia was cut through. The cyst was then shelled out, the wound packed with iodoform gauze and closed with deep sutures. The gauze was in two days replaced by drainage tubes, through which the cavity was washed out daily. The patient was discharged in three weeks.

The author believes that subperitoneal dermoid cysts of this

character are not rare ; he has collected eleven such cases. The operation may be performed in other cases, such as tumors, foreign bodies, hæmatomata of the ischio-rectal fossa and sub-peritoneal cavity, recto-cervical fibromata, intra-ligamentous and retro-peritoneal ovarian cysts, retro-uterine hæmatocele and abscess, and other cases. The great advantage of perineotomy is that it permits the diagnosis and removal of these ovarian sub-peritoneal growths without incising either vagina or rectum, and hence avoids the consequences of fistulæ.

Hydrastinin in Uterine Hemorrhage.—Falk (*Archiv f. Gyn.*, Bd. xxxvii, Heft 2) reports 28 cases of hemorrhage treated by this drug ; 8 were due to the presence of fibro-myomata. He found it useful in hyperplastic endometritis and congestive dysmenorrhœa. It should be given before the flow, preferably by hypodermic injection, in doses of from three-quarters of a grain to one grain and a half (in aqueous solution). Muriate of hydrastinin acts more powerfully than the fluid extract of hydrastis, probably by causing contraction of the arterioles. The diminution of blood-supply to the uterus causes uterine contraction, which still further increases the anæmia ; painful contractions were repeatedly noted.

Substitute for Salpingo-Oöphorectomy in the Treatment of Fibro-Myoma. (*Wiener Klin. Wochenschrift*, No. 10, 1889.) —Rydygier recommends the tying of the ovarian and uterine arteries instead of castration. He splits the broad ligaments and ties the arteries. In one case in which this operation was performed the tumor was reduced to one-fourth its original size within four months.

The more Remote Results of Removing the Ovaries and Tubes.—Dr. Howard Kelly writes a very interesting paper in the *Johns Hopkins Bulletin* on this subject. The paper is largely statistical and deals with the results he obtained in the experience of ninety-six cases. This experience extended over a period of four years. Eight were cases of salpingo-oöphorectomy for fibroids, all symptomatically relieved. Twenty-five were cases of tubo-ovarian abscess, commonly called pyosalpinx cases ; of these cases Dr. Kelly says that he does not know of

a single case "not improved." Thirty-three were cases exhibiting evidence of salpingitis and ovaritis; every case bound down by adhesions due to pelvic peritonitis. Thirteen of these cases are reported as perfectly well. Seventeen are improved. One case died some months after the operation. Of twenty-five cases operated on for lesser diseases of the ovaries and tubes, nearly all are well or greatly improved. The author says:

"I will summarize my statistical statement and anticipate my conclusion by the following declarations—First, but a small percentage of women thus operated upon (salpingo-oöphorectomy) are restored to perfect health within a few weeks; secondly, a larger number only experience a certain percentage of improvement, the operation forming a necessary stepping-stone to comparative health; and thirdly, a few cases are subjectively no better after the operation than before it, although seriously diseased structures may have been removed. It is at once evident from this statement that I hold that abdominal surgery stands upon the same plane as general surgery, and that the successful results are not often absolutely good, and are oftener relatively good results. A comparison with the amputation of general surgery may be very appropriately made. The amputation has in the past been sweepingly termed the 'opprobrium of surgery.' In cases of compound fractures this opprobrium has been recently very unexpectedly removed by antiseptic surgery. In crushes and gangrenous limbs no procedure is more nobly conservative and beneficial than amputation. In withered, distorted, painful limbs is it purely a question of risk and suffering incurred, as balanced against the probability of relief and increased usefulness, which decides the surgeon whether to operate or to stay his hand? So it is with these tubo-ovarian amputations—the gangrenous sloughing masses must come out at any risk. The withered misshapen tubes and ovaries bound down to the pelvic floor only ought to come out if we can show good enough results. The statement of the results implies the question, which it answers at the same time, 'Is the gain worth the risk and the suffering?' I would urge that in a scientific consideration of the question we should from the outset avoid the confusion of speak-

ing of salpingo-oöphorectomy as if the operation were for but one disease. From a practical standpoint there are two classes of cases in which the operation is called for. They are the *necessary* and the *elective*. Salpingo-oöphorectomy performed for fibroid tumors choking the pelvis and pressing on rectum and ureters, and for pyosalpinx, is an operation *necessary* to save life. Salpingo-oöphorectomy performed for chronically inflamed ovaries and tubes, or for small ovarian cysts or blood cysts of the ovaries, is a purely *elective* operation. The *results* of salpingo-oöphorectomy should be divided into two classes connected by the bridge of time—first, those results which at once follow in the train of the operation, and, secondly, those symptoms which persist or crop out after months or years—the *immediate* and the *remote* results. In estimating the results we must never lose sight of the fact that the suffering which immediately follows an operation, even though the patient be completely cured by it, is to be weighed against the operation along with its mortality, the accidents of fœcal fistulæ, injured ureters, fistulous drainage tracks, hernia, ileus and all pain from adhesions and other sequelæ. Among the remoter results are uterine hemorrhages, hernia, late discharge of the ligatures, and I might include here persistence of pain, which it had been expected the operation would relieve. Some of these evils can be readily obviated by closer attention to some details in the technique. Hernia is an evil which will be much lessened by a more careful technique of the drainage-tube, and more careful suturing, remembering that this form of hernia, like ordinary ventral hernia, is a diastasis of the recti muscles, which must therefore be brought into careful apposition. Neither skin nor peritoneum must intrude between the lips of the wound, and when the drainage tube is pulled out its track in the abdominal wall must be closed by a provisional suture laid there at the operation for this very purpose. To avoid some of the evil late results of salpingo-oöphorectomy I would also urge the following practical points :

The ligature often remains a focus of sepsis long after the pelvis has completely emptied itself of all débris. Avoid this by never drawing a ligature through the pedicle of a pyosalpinx so

long as there is any pus in the pelvis or about the stump. The sepsis thus dragged into the interstices of the pedicle is a fruitful source of serious trouble.

Use a drainage tube large enough to work rapidly, plug it with gauze for continuous capillary drainage. Keep it aseptic and get rid of it soon, lest its track suppurate and pus in this way get into the ligatures.

Work deliberately and carefully, and do not unnecessarily handle the intestines.

Examine the specimen carefully before concluding the operation, to see that it is perfect and no pieces of tube or ovary are left behind.

In cases of sarcoma give the tumor a very wide berth. If you don't, your pedicle will propagate the disease. Do not consider the work at an end when the stitches are out, but watch the patient for some weeks or months. Avoid carefully excessive constipation.

Keep your cases longer in the hospital ; two and three weeks is too short a convalescence ; they are liable to be seriously ill again after getting home."

At the last meeting in Nashville, Tenn., of the American Medical Association, Dr. Franklin H. Martin of Chicago read a paper on *A Plea for Early Vaginal Hysterectomy for Cancer of the Uterus*. Dr. Martin, whose principal experience has been in electricity heretofore, concludes as follows :

1. Vaginal hysterectomy is the most justifiable surgical procedure we know as yet for cancer of the uterus.

2. Vaginal hysterectomy should be attempted for the cure of cancer of the uterus at the earliest possible moment after the disease is diagnosed.

In support of the foregoing propositions these facts were given :

(*a*) Vaginal hysterectomy will remove the entire disease in cancer of any portion of the uterus in a greater proportion of cases than any other surgical procedure now recommended.

(*b*) Vaginal hysterectomy will enable the operator to go farther beyond the diseased tissue into healthy tissue than any other surgical procedure.

(*c*) Vaginal hysterectomy is a more ideal surgical operation, and leaves the remaining tissues in a less favorable condition for return of the disease than will any other operation.

(*d*) Vaginal hysterectomy for cancer of the uterus will in the future give an immediate mortality among general operators of not more than ten per cent. In the hands of experts it will not exceed five per cent.

Mesenteric and Omental Cysts.—A most interesting note on the above subject, with cases illustrating them, appears in the *British Medical Journal* of June 14, 1890, by Sir Spencer Wells. The first case was that of a diseased cyst of the mesentery occurring in an unmarried girl of 19 years of age. The tumor was regarded at first as a hydatid tumor of the liver. It extended from the lower edge of the liver downwards for about four inches below the umbilicus ; below this there was resonance, and the vaginal examination showed no evidence of pelvic tumor. The tumor could be freely pushed from side to side, but not upwards or downwards. On opening the peritoneum the mesentery welled up in cyst-like form. On dividing this there escaped yellowish semi-solid fat-like matter, with some bundles of hair. The cavity extended back to the spine or root of the mesentery. The fatty matter removed weighed six pounds, and was pronounced by the pathologist to be dermoid matter. There was no drainage used ; the patient recovered.

The other case was one of *omental cyst.* This occurred in a girl of 4 years of age. On examination the abdomen is chiefly prominent below the navel, and the prominent area is dull on percussion and fluctuating. The diagnosis made by Sir Spencer Wells was a thin-walled cyst, probably ovarian. The cyst was tapped and three pints of fluid drawn off. The fluid was like water, and had but a trace of albumen in it. The fluid collected again, and in thirteen months it was removed by laparotomy. There was found to be a cyst-like expansion of the omentum, which was adherent to adjacent parts. The patient recovered quickly after the operation and returned to her home. The author states that the father of the patient wrote to him five months afterwards, saying, " She eats, drinks and sleeps well, and romps about in a very different way to what she used to."

After Effects of Caustics and Astringents.—(*Jour. of Obs.*) M. Doléris has something to say on the functions, pathology and surgery of the cervix uteri, from which we gather a number of points worth reading, and particularly does he teach us a lesson on the *after-effects* of caustics and astringents that some of us ought to carefully consider. Taken as a simple passive canal, the normal uterine canal has in its general configuration an almost rectilinear direction ; it is only slightly curved at the isthmus. Its calibre is always sufficient for its function. The structure of its membrane and the shape of its walls assure, by a kind of drainage apparatus, the permeability of the organ in two directions, from within outward, and inversely. The moderate secretion of cervical mucus is not unfavorable to its function. The primordial rôle in the initial phenomena of fecundation belongs incontestably to the os uteri. Among women who have had children the vaginal canal is larger, but the uterine orifice is more open and much more accessible than in those who have never had children. In this manner the normal aptitude to successive fecundations is preserved. When an excessive deformation vitiates these reciprocal dispositions of the vagina and cervix uteri, the aptitude diminishes and even disappears. The muscular tension of the stroma of the cervix responds to various active phenomena in relations with its function. The cervix acts as a sphincter during gestation and during the first phase of parturition. The rôle of the muscular sphincter is greatly aided by the vascular circle which surrounds the cervix in its subvaginal portion, and which constitutes in the uterine isthmus a true erectile tissue, at the edge of which the muscular fasciæ are reduced to an areolar membrane. The maintenance of the muscular tissue and the integrity of the nervous influx are the guarantees of the resistance of this region. All the pathology of the cervix uteri is contained in three words—traumatism, inflammation, and degeneration or neoplastic processes. Cervical endometritis causes ectropion of the mucosa of the cervix, just as rectal inflammation causes hernia of the rectal mucous membrane. *Caustics and the thermo-cautery cause transformation of the cylindrical epithelium, thus lining all the cervical ectropion by*

a solid pavement-like coat. From this we have obliteration of the ducts of those glands which open on the surface of the ectropion. What happens now? The secretions of the glands are retained and produce chronic tumefactions. Under the *cicatrix* thus formed ensue processes which have escaped many observers. The glands are altered, filled by the products of secretion, and enclosed under a corneous envelope. From time to time there appear at the surface follicles filled sometimes by pus, a proof that infection exists in the depth of the tissue. The last stage of this chronic lesion is cystic degeneration with invasion of the sclerosed tissue by cysts. These disturbances cause elongation of the cervix, atresia of the cervical canal, deviations, etc. They occasion also the awakening of salpingo-ovarian affections. The vascular sphincter permits us to understand localized spasms of the internal orifice. Precocious atheroma, constitutional or acquired enfeeblement of the arterial walls, etc., cause loss of the firmness of the structures at the junction of the cervix and body of the uterus, with atony of this middle segment and flexion at the isthmus.

Pelvic Abscess Treated by Abdominal Section.—(A. W. Mayo Robson, F.R C.S., in *London Med. Press.*)—Abscesses situated in the pelvis frequently offer very unfavorable conditions for rational treatment, since the abscess cavity either cannot be safely reached, or if reached, is with difficulty cleared out and drained. These considerations have so influenced gynæcologists that the great majority of them in such cases are content with expectant treatment, although the feasibility and safety of opening the abdomen, searching for, emptying, and draining such cases has been proved by Mr. Lawson Tait and others. The pelvic abscesses referred to below have nothing to do with lumbar, psoas, and other collections of pus, which have distinct origins outside the pelvis, but are to be considered as mere sequels to certain diseases, such as pelvic cellulitis, pelvic peritonitis, and hæmatocele, or to ovaritis, salpingitis, or breaking down of tubercle. Every surgeon knows the course pursued by such collections, their tendency toward continuous or intermittent evacuation into hollow viscera, either vagina, rectum or bladder;

or by long circuitous fistulæ on the surface ; the violence of the inflammatory storms which occur at irregular intervals after a delusive period of quietude ; the condition of impotency or infirmity in which they leave women, even after a spontaneous cure, which always demands a very long time ; and their frequently fatal termination either by the pus bursting into the peritoneum and setting up acute peritonitis, or by the constant discharge bringing on hectic fever ; or more indirectly by the supervention of tuberculosis or amyloid degeneration. There are some fortunate cases where the abscess, projecting into the vagina, allows an opening to be made and drainage to be effected, but these are exceptional ; in the greater number it is impossible to discover by the touch a fluctuating point in the hard plastic mass which fixes the uterus. Even if the abscess can be opened by the vagina or rectum, it is a most difficult matter to keep the cavity aseptic and to secure efficient drainage. If, then, expectant treatment is so unsatisfactory, what other means have we at our disposal ? Firstly, *aspiration*, which according to Mundé is a successful mode of procedure. In several cases where there have been small and localized abscesses, I have found this simple method efficient, but it is uncertain in large, and useless in multiple, abscesses, aad its indiscriminate use is not unattended with danger, for it must be borne in mind that important structures often overlie the tumor and have to be pierced before it can reached. Secondly, *sub-peritoneal laparotomy* as performed and advocated by Dr. Pozzi of Paris. It would seem to me, however, that this method can only have a very limited application, and can only be safely adopted where there are signs of the abscess approaching the side of the pelvis. And lastly, *abdominal section*.

Intraligamentous Ovarian Cystoma.—A most instructive and interesting paper upon this subject is reported in the *N. Y. Med. Record* of April 15th, 1890, by Dr. Skene of Brooklyn. The author begins by pointing out the difference between these cysts and the ordinary ones, being simply that of the position they occupy in relation to the broad ligaments. The two theories which are advanced to explain the topographical anatomy of

intraligamentous cystomata are: *First*, owing to error of development the ovary during embryonic life finds its way into the folds of the broad ligaments and there remains. *Second* theory is that during the growth of the cystoma it burrows into the folds of the ligament and pushes them apart causing them to form a ligamentous capsule over it. Again, where a cyst develops deep in the substance of the ovary and meets resistance on the free peritoneal surface, it also pushes its way in between the folds of the ligament. These cystomata which spring from the deeper structures of the ovary are the ones which Bland Sutton of London has written about as originating in the paroöphoron, and which are generally papillary or proliferous cysts. These papillary cysts may be single or double, but Dr. Skene's experience proves them to be, in the majority of instances, single or monocysts. In regard to position of these cysts, the author states that in some the tumor was in one ligament displacing the uterus and bladder to the opposite side of the pelvis. The tumor in other cases occupied a position in both ligaments and between the uterus and bladder. When thus located the tumor, uterus and bladder were found high up out of the pelvis, so that the most dependent portion of the tumor could not be felt through the vagina. Again, the tumor has been behind both uterus and bladder and yet between the folds of both ligaments. In these latter cases the pelvic organs were carried high up into the abdominal cavity while the tumor descended deep into the pelvis. From these facts a general rule has been established as follows. When the tumor is between the uterus and bladder all three rise up into the abdomen, whereas if the tumor is behind these organs it dips down deeply into the pelvis. When, therefore, a cystic tumor in the abdomen is firmly fixed below, with no history of inflammation during the early states of its growth, and the uterus is drawn up out of the pelvis and lies behind or in front of the tumor, the author suspects that it is intraligamentous. If the uterus is displaced to one side in a marked degree and the tumor dips low down into the pelvis, the facts point to the same conclusion. When a portion of the tumor found in the pelvis is cystic and fluctuates, it is a great aid to

diagnosis, because proliferous cysts generally contain much solid material in their most dependent part, giving the appearance of a sold tumor, often mistaken for fibro-cysts of the uterus.

When an intraligamentous cystoma is exposed by laparotomy its appearance resembles closely a uterine fibroma, and owing to the thickness of its walls it feels to the single touch like a fibroma. Fluctuation, however, sets this question aside, and tapping will decide by virtue of the nature of the fluid

Dr. Skene enumerates the ordinary methods of treatment in these cases. Enucleation ranks first. This method, introduced by Miner of Buffalo, has been practised by many ovariotomists. Enucleation is adapted to all cases in which the cystoma descends into the pelvis completely separating one or both ligaments. This method will succeed in all cases unless the cyst wall has become united to the folds of the ligament by inflammatory action or the cyst wall is thin and friable. The technique of enucleations is as follows. The cyst should be tapped high up so as to avoid wounding the thickest portion of the broad ligament. To do this it is sometimes necessary to enlarge the abdominal incision. The cyst being emptied and drawn well out of the wound, the separation should be begun at the highest and thinnest point of the cyst. The dissection should at first be accomplished with the knife handle, but as we get near the base the fingers will be found the best aid. It is now necessary to make traction *only* on the cyst wall, not on the separated folds of the ligament, which are easily lacerated. During this dissection much oozing occurs and some large venous vessels may be torn. These should be controlled by hot sponges, forceps, ligature, styptics or gauze packing, according to the operator's judgment. The management of the cyst capsule now requires treatment. The upper portions of it should be folded inwards into its cavity so as to bring the peritoneal surfaces together, and fixed there by a continuous catgut suture. The capsule should now be brought to the lower angle of the wound, united to it, and a drainage-tube inserted.

Dr. Skene speaks of another method adapted to those cases in which the cyst is situated in one broad ligament and does not

dip very low down. This condition means a broad pedicle, and should be ligated with the chain ligature. The author describes the method of applying this ligature, but he makes a very serious mistake in the description. Instead of passing the second ligature through the one already tied, it and all the others should be passed, their respective ends clipped in a separate forceps to prevent them getting entangled; they should then be tied. The reason for adopting this method is obvious without explanation. The cyst and its capsule are then cut away and the pedicle dropped. In adopting this method the author draws attention to the danger of including the ureter in the ligature, which should always be borne in mind. He also speaks of the combined method—*i.e.*, first enucleating the cyst and then ligating the capsule or pedicle. The ureter, by this method, is less liable to injury.

Dr. Skene, in concluding his paper, refers to cases where neither of the methods mentioned can be carried out. These are cases of cystomata deeply buried and adherent in the pelvis which have undergone suppurative inflammation, and containing highly infective pus. Such cases are very difficult to manage, and are highly dangerous on account of the liability of infective matter to escape from the cyst into the peritoneal cavity. The only safe way to operate is to attach the cyst to the abdominal wall by sutures and evacuate the contents, keeping up as perfect a drainage as possible until the cyst has ceased secreting from its inner surface. If this should be prolonged, curetting or injecting the cavity with iodine or carbolic acid has obtained good results in the author's hands.

In reporting rather minutely upon the salient points of Dr. Skene's paper, I feel there is no apology needed. It is a dissertation of the highest value to specialists engaged in this work, and what makes it especially so in this instance is that it is a statement of the experience of one of the most honest and astute observers of the present day on our continent.

Correspondence.

To the Editors of The Montreal Medical Journal.

Sirs,—It has occurred to me that the following cases of antifebrin rash may prove worthy of record :

The first case was one of pneumonia in a man of 45 years of age. Two 8-grain powders of antifebrin were prescribed, the second one to be taken four hours after the first. Profuse perspiration with lowering of the temperature to the extent of two degrees followed the administration of the first powder, but half an hour after the powder had been taken a slight erythematous rash appeared upon the face and chest. In four hours two-thirds of the other powder was taken, and was followed by profuse perspiration and another lowering of the temperature, this time to 100°. The rash, which had begun to fade before the administration of the last powder, now returned with greater intensity, extending over the whole body and being distinctly erythematous, with urticarious patches interspersed over the face and forearms. The rash remained out for six days, and was intensely itchy.

The second case was that of a girl, aged 19, who had typhoid fever, and whose temperature was 104.8°. Six grains of antifebrin were given. Profuse perspiration. The temperature was reduced to 103°, but a distinctly urticarious rash appeared upon the chest and forehead within half an hour, and remained visible for two hours. In four hours from time of first dose five grains were given. The rash immediately returned, with the perspiration, but with greater intensity. Temperature reduced to 101°. The rash was distinctly of an urticarious nature, and in wheals, extending more particularly over chest, face and forearms ; also on chest and forehead there was a slight rash resembling measles, but this latter soon disappeared, the urticaria remaining out for five days, then gradually fading away. There was intense itchiness.

Yours truly, O. E. Morehouse.

June 23rd, 1890.

Reviews and Notices of Books.

A Text-Book of Medical Physics for the Use of Students and Practitioners of Medicine. By John C. Draper, M.D., LL.D. With 377 illustrations. Philadelphia: Lea Brothers & Co.

The author says in his preface: "Broadly speaking, this work aims to impart a knowledge of the relations existing between physics and medicine in their latest state of development, and to embody in the pursuit of this object whatever experience the author has gained during a long period of teaching this special branch of applied science."

While all enlightened physicians will agree that a knowledge of physics is desirable for the medical student, only those actually engaged in the teaching of the primary subjects can be fully aware of the difficulties encountered by students who attempt the study of these subjects without a knowledge of either physics or chemistry. These are especially felt by the teacher of physiology. It is, however, impossible for him to impart a knowledge of the main facts of his subject and establish them by reasons and experimental demonstration and at the same time undertake to teach *ab initio* the principles of chemistry or physics. Hence the desirability, we may say the necessity, for some such work as the present one.

No man in America was better fitted than Dr. Draper for the task he undertook, and he has provided the student and practitioner of medicine with a volume at once readable and thorough. Even to the student who has some knowledge of physics this book is useful, as it shows him its applications to the profession that he has chosen. Dr. Draper, as an old teacher, knew well the difficulties to be encountered in bringing his subject within the grasp of the average student, and that he has succeeded so well proves once more that the man to write for and examine students is the one who has taught and is teaching them.

The work is no mere skeleton or compendium so dry and destitute of educational value that it can serve no purpose but that

of assisting in cramming. On the contrary, it is interesting, and must stimulate and strengthen the mind of the reader. The book is well printed and fully illustrated, and in every way deserves grateful recognition.

On the Animal Alkaloids: The Ptomaïnes, Leucomaïnes, and Extractives in their Pathological Relations. By Sir William Aitken, Knt., M.D., LL.D., F.R.S., Professor of Pathology in the Army Medical School. Second edition. London: H. K. Lewis, 136 Gower st., W.C. 1889.

The subjects dealt with in this little volume are, though comparatively recent, of the greatest interest and importance in every day practice. The cardinal idea brought out "points (1) to the evolution of diseased states from retention in the body of its own 'excretions' and of the products of their decomposition; (2) to the consequences and direct issues of inadequacies of function, as regards especially the cutaneous, intestinal, hepatic, pulmonary and renal functions."

It is scarcely necessary to say that the work is in every way worthy of the reputation of its distinguished author.

Practical Electricity in Medicine and Surgery. By G. A. Liebig, Jr., Ph.D., Assistant in Electricity, Johns-Hopkins University, etc., and George H. Rohe, M.D., Professor of Obstetrics and Hygiene, Baltimore. Philadelphia and London: F. A. Davis. 1890.

As the title indicates, this work is eminently practical, and practical in the best sense of that term. In the application of electricity to the diagnosis and treatment of disease it is essential that the practitioner should be conversant with the leading facts known about electro-physics and electro-physiology. These subjects are dealt with in the volume under consideration in a very clear, concise and able manner. The application of electricity to the treatment of disease is considered in the third part of the volume, and fully and fairly represents our present knowledge of this subject. The work is profusely illustrated.

De la Grippe et de son Traitement par le Sulfate de Quinine. Par le Dr. P. Gellie. Bordeaux, 1890; pp. 45.

The author of this pamphlet, which is a reproduction of a paper read at the Société de Médecine et de Chirurgie de Bordeaux, recapitulates the history of influenza, and concludes that the epidemic through which we have just passed is not a form of dengue as many suppose. Three forms of the disease are recognized—the nervous, the thoracic, and the gastro-abdominal—in all of which sulphate of quinine is said to have acted with great effect and certainty as a neurasthenic and antiseptic of the first order, shortening the duration of the disease and preventing the development of serious symptoms. Some carefully noted histories in support of the statements made by the writer are added.

The Neuroses of the Genito-Urinary System in the Male, with Sterility and Impotence. By Dr. R. Ultzmann, Professor of Genito-Urinary Diseases in the University of Vienna. Translated by Gardner W. Allen, M.D., Surgeon in the Genito-Urinary Department, Boston Dispensary. Philadelphia and London: F. A. Davis. 1889.

Dr. Allen has performed a very useful piece of work in making known to English readers the rich mine of true clinical work contained in the late Prof. Ultzmann's articles on the genito-urinary organs. The translation is well executed.

The Extra Pharmacopœia, with the Additions introduced intothe British Pharmacopœia, 1885. By William Martindale, F.C.S., late Teacher of Pharmacy and Demonstrator of Materia Medica at University College. Medical References and a Therapeutic Index of Diseases and Symptoms by W. Wynn Westcott, M.B., Deputy-Coroner for Central Middlesex. Sixth edition. London: H. K. Lewis, Gower street. 1890.

The sixth edition of this useful work more than sustains its well-deserved reputation. Full directions for the administration of the recently introduced drugs are given.

Society Proceedings.

MEDICO-CHIRURGICAL SOCIETY OF MONTREAL.

Stated Meeting, 18th April, 1890.

G. E. Armstrong, M.D., President, in the Chair.

Aneurism of Arch of Aorta.—Dr. Johnston exhibited this specimen. The sac had a position backwards to the right of the median line ; the whole arch and the vessels arising from it were very much dilated, and only loosely attached to the trachea.

Dr. Finley, who had examined the patient during life, said that he had complained of nothing of a definite nature—no pain, no pressure symptoms, and no tugging at trachea. There was a limited area of dulness over the aortic cartilage, and aortic regurgitation was present. It was extremely interesting to note that so large an aneurism had given rise to neither objective nor subjective symptoms.

Intestinal Obstruction.—This specimen was removed by operation from a child who for two days had suffered from intestinal obstruction. The gut to the extent of one inch below the jejunum was found completely occluded, cystic in character, and contained small bodies like sago grains. It was thought that intussusception had occurred in early life.

Dr. Johnston exhibited for Dr. Fenwick the *Brain and Skull* of a man who had committed suicide by shooting. The entrance of the bullet was just above the right external angular process of frontal bone and its exit at the inner angle of left orbit. The right orbital plate was fractured ; the antrum of Highmore, on the same side, was in a state of suppuration ; the right eye was in a condition of panophthalmitis. Brain matter had oozed out from the entrance wound. Left hemisphere not touched.

Perforating Ulcer of the Stomach.—The President exhibited the specimen. In anterior and posterior walls, directly opposed to each other, is a small ulcer, half an inch in diameter, which has completely penetrated the coats of the stomach. There is no zone of hyperæmia about either ulcer. The right ovary is cystic, its walls gangrenous, and enclosing a recent blood-clot.

The history of the case is as follows: A young woman aged 18, after attending a ball, was suddenly seized with abdominal pain, followed by general peritonitis. Temperature 103°; pulse 160. Next day the heart's action began to fail and the abdominal distension increased. Decided to perform abdominal section by an incision in the right iliac region. Upon opening abdomen there was a great escape of flatus without odor; the upper part of abdomen remained even now distended and the lower zone quite flaccid. A little pus was found on visceral layers of the peritoneum. No fæces free in abdominal cavity. The appendix was free and not inflamed, but filled with fæces, and a few seed-like bodies felt to be contained therein; the appendix was removed. Although the patient's condition improved temporarily, yet seven days later she died from general peritonitis. At the autopsy, in addition to the condition of the stomach and ovary already described, it was found that the abdominal cavity was divided into two by the adhesion of the transverse colon to the anterior abdominal wall; the upper cavity contained a fluid dark in color and grumous in character; the lower cavity showed presence of recent lymph, the intestines being matted together. The former condition explains why the abdomen still remained distended above after the abdominal cavity had been opened. The previous history of the patient was good; she was anæmic, well nourished, and at times suffered from indefinite dyspeptic symptoms. No vomiting; no hæmatemesis.

Discussion.—Dr. Bell thought from the history that the original source of the trouble had been from the ovary, and that the ulcers had perforated only when the vital powers had been reduced to a low ebb.

Dr. Shepherd asked why, if the appendix were not diseased, it had been removed? He thought that the ulcers probably originated *post-mortem*, as there was no plastic exudation about them.

Dr. Alloway said that cases of sudden rupture of the ovary of this nature were very apt to occur in anæmic girls. Were the ovary the exciting cause of the peritonitis, why had there not been more inflammatory reaction in the adjacent structures?

He did not understand why Dr. Armstrong had selected the lateral operation.

Dr. Armstrong, in replying, said that he had selected the lateral operation because it seemed to him that the appendix on that side was the offending body, and had, when reaching it, removed it because it was full of faeces and was felt to contain sago-like grains. He thought that the perforation of the stomach was a very late accident, as the patient continued to take nourishment by the mouth without rejecting it.

Dr. Johnston exhibited for Dr. DeCow a specimen of perforating ulcer of stomach. The ulcer was situated on the posterior wall, about half an inch in diameter. There was recent lymph outside and about the perforation.

Dr. DeCow said that the patient had, up to two days before death, enjoyed good health, but at that time had partaken freely of hard-boiled eggs and beer, the urgent symptoms developing two days later.

Dr. McCarthy said he had seen this patient in consultation, and had confirmed the diagnosis. He would only ask, "Could anything be done surgically in these cases?"

Necrosis of Tibia.—Dr. Johnston exhibited the specimen, showing two large areas of dead bone extending from the medullary cavity to the anterior surface. The outer surface of one of these areas had sloughed, and appeared to be undergoing absorption. The whole bone was extremely dense and the medulla almost obliterated.

Colloid Cancer of Bladder.—Dr. Johnston gave the following report of the autopsy on this case:

M. J., aged 32; body of a well-built man; slight dropsy of feet; laparotomy scar above pubis; extensive scar and small urinary fistula in perineum. On opening abdomen, the anterior half of pelvis completely filled by a hard nodular mass, which has infiltrated all the tissues in the neighborhood of the bladder. Pelvic organs removed with ureters and kidneys. Lymph glands about brim of pelvis are greatly enlarged, of gristly consistency, and on section cut surface is translucent, showing distinct large alveoli filled with colloid substance. The bladder wall is thick-

ened to three-quarters of an inch, is extremely hard, and shows the same colloid change. The cavity of the bladder is about the size of a hen's egg. The walls cannot be distended nor made to collapse. The mucosa is everywhere ragged and sloughing. At the fundus is a fungating nodule as large as a walnut, having the appearance of boiled sago when cut into. The wound in the urethra has cicatrized, with the exception of a small fistula, and there is no infiltration about it nor about the neck of the bladder. The ureters are considerably distended, and their orifices appear to be completely obstructed from the infiltration at the base of the bladder. The pelvis of each kidney is greatly distended, but the calices are only slightly dilated, and the papillæ are still prominent. The kidney substance is intensely anæmic. The lungs are œdematous at the bases and show small areas of broncho-pneumonia. No secondary cancer anywhere in the organs. Microscopically the growth is seen to consist of thick-walled fibrous stroma arranged in large alveoli. In nearly all of these alveoli the cells have undergone colloid change, and at one spot the stroma appears to be infiltrated with a similar substance. A point of special interest is the fact of the cancer being of the colloid variety. At what period in the history of the case this change first commenced it is impossible to say. I examined the urine several times about four months before the man's death, but failed to find any fragments of cancer. From the appearance of the inner surface of the bladder at the time of the autopsy there can be no doubt that such fragments were passed in abundance, but were probably overlooked by me, because I had not thought of the possibility of their being colloid. Unfortunately, a piece of tissue removed for examination when the bladder was explored (in November, 1889) was lost instead of being sent to my laboratory.

In the absence of Dr. Praeger of Nanaimo, the Secretary read the paper on *Cholecystectomy*, a full report of which appeared in the June number of this JOURNAL.

DR. BELL related a case of symptoms of belladonna poisoning in an old man, due to the application of a belladonna plaster to the back.

Dr. Shepherd mentioned a case in which an acute attack of eczema invariably followed a single dose of five grains of citrate of iron and quinine.

Selections.

ON THE AMŒBA COLI IN DYSENTERY AND IN DYSENTERIC LIVER ABSCESS.

By William Osler, M.D.,
Professor of Medicine, Johns Hopkins University.

The first observation on rhizopods, as human parasites, was made by Lamb in the year 1859, who found in the mucus of the bowel in a child dead of enteritis, amœboid bodies and other rhizopods belonging to the *difflugia* and *arcella* types. Leukart doubts whether these forms could be definitely regarded as parasitic. The first satisfactory studies on the subject were made by Losch of St. Petersburg, who found the parasites in the stools in a case of ulcerative inflammation of the colon. They were in extraordinary numbers and presented all the characters of amœbæ. The movements were extremely active, and the elaborate description which he gives might have been written from a study of the specimens in which we have here been interested. He injected the stools containing amœbæ into the rectum of three dogs, in one of which, at the end of eighteen days, the amœbæ were found in large numbers in the mucus of the bowel and at the basis of a small ulcer which had formed.

Kartulis, stimulated by the observations of Koch, who found, during his cholera investigations in Egypt in 1883, amœbæ in sections of the intestines of persons dead of dysentery, examined 150 cases in a period of two years, and in every one found these organisms in the stools. In twelve post-mortems the amœbæ were present in the ulcers in every case.

They were present in all stages of the disease, in both acute and chronic cases.

He has extended his studies on this question to the liver abscesses, which occur so often in cases of dysentery. In an examination of twenty liver abscesses he found the amœbæ in

sections of the walls in every case. In one instance he found a living amœba in the pus of the abscess, examined fresh after death. They presented the same characters as the parasites which he had found in the large intestines. In *Virchow's Archiv*, Bd. 108, he gives a fuller account of his observations. He has met with the parasites in more than 500 cases of dysentery, and in all the cases of liver abscess due to this disease which he has examined. In thirteen of twenty-two instances of these abscesses cultures were made, eight of which were negative; in three there were *staphylococci*, in one the *bacillus fœtidus*, and in one the *proteus vulgaris*. He holds that the amœbæ, which exist in all the layers of the intestines in dysenteric ulceration, pass with the micro-organisms and detritus through the portal veins to the liver. The micrococci excite the suppuration, but only in consequence of the lesions induced by the amœbæ. The pus seems to die rapidly in the abscesses, but the amœbæ remained alive for a much longer period, often over two months. Histologically, Kartulis describes three zones in the abscess wall,—first, the detritus zone, containing fibrous granulations and amœbæ; second, the cell zone, consisting of young cells which stain deeply and between which can be seen portions of liver tissue, liver cells and capillaries; and third, the limitation zone, separating the disease from the intact liver tissues. His most recent communication is in the *Centralblatt für Bakteriologie*, No. 2, 1890, in which he reports two cases of dysentery which had originated in Athens, in both of which amœbæ were present in the stools, similar in character to those met with in the Egyptian dysentery.

Massiutin has studied this question under Losch's supervision. He has found the parasites in five patients,—one, a case of chronic dysentery of seven years standing; the second, a man with chronic intestinal catarrh; a third, a case of typhoid fever with late diarrhœa and much mucus in the stools; the fourth and fifth were cases of diarrhœa with fluid mucoid stools. The amœbæ presented active movements and seemed to have the same characters as those described by Kartulis. He doubts their connection with the intestinal condition. He thinks that

they gain access to the intestine through the water and find in the mucus of the colon situations suitable for their growth.

Baumgarten comments as follows upon the view of Kartulis that the amœbæ constitute the exciting agents in the disease. "We will not contradict this view, although, as many old and recent observations show, very similar amœboid forms occur in other intestinal affections and even in normal fæces. We regard it, however, as unlikely that the amœbæ could induce all of the conditions in the dysenteric processes. Dysentery consists anatomically in a combination of diphtheric and purulent inflammation, which induces rapid and deep ulceration of the affected part. We have no analogy to show that amœboid parasites can induce ulceration, and we rather believe that the pyogenic micro-organisms, well known as exciters of ulcerative processes, are concerned with the amœbæ in the causation of tropical dysentery."

This pracsically embraces the entire literature of the subject. I had, after the publication of Kartulis' paper, made several examinations in Philadelphia with negative results. During a visit to the Hospital, Dr. Lutze, last October, stimulated our interest in the matter, as he stated that he had frequently met with the parasites in tropical dysentery. We have since had opportunities of examining several instances of the local dysenteric attacks, and in one case we thought we had found the parasites, but we were not very confident. Recently, however, a case has been under observation in which the amœbæ have been found, not only in the stools, but in enormous numbers in the pus of abscesses of the liver. The details of the case are as follows :

Dr. B., aged 29, resident in Panama for nearly six years, where he had had several severe attacks of dysentery, or indeed, more correctly speaking, a chronic dysentery, came north in May, 1889, and after remaining for a short time at his home in Baltimore, went to Germany. He had intervals of freedom from the diarrhœa, but in Vienna it recurred severely. He returned to this country in December, and shortly afterward began to have an irregular fever with occasional chilly sensations and sweats, to lose flesh, and to have a very sallow complexion.

These symptoms persisted through January, and about February 15th I saw him in consultation with Dr. Friedenwald. His general condition was very good, considering that he had had severe dysentery and an irregular fever for more than two months. The liver was slightly enlarged anteriorly, but not specially sensitive. Posteriorly, there seemed to be a very distinct extension of the dulness upward. He had six or eight mucoid stools with traces of blood daily. I saw him subsequently on four occasions and the symptoms remained practically the same. The temperature rose each day to about 103°. There were no positive chills, but occasionally toward the afternoon he complained of sensations of cold. The diarrhœa lessened and his appetite improved, but in spite of this he had lost flesh and strength. Anteriorly, the liver dulness was not much increased, but behind it extended nearly a hand's-breadth above the normal limit. There was distinct sensitiveness on deep pressure below the edge of the right costal cartilages, and he complained of a dragging pain whenever he turned upon his left side. The suspicion entertained at first that he had abscess of the liver was gradually confirmed, and on March 22nd Dr. Tiffany aspirated, and then incised and drained two large abscess cavities in the right lobe of the liver. The pus was thick, of creamy consistence, in color, in places slightly bile-stained, but it had not the reddish-brown and anchovy-sauce-like appearance presented by the pus in many cases of hepatic abscesses.

I made an examination of the pus at the Biological Laboratory, within three-quarters of an hour of its withdrawal, and found in it, in large numbers, the amœbæ which Kurtulis had described. The material was taken at once to the Pathological Laboratory, where Prof. Welch and Dr. Councilman confirmed the observation. On each succeeding day, at the time of dressing, pus was removed from the drainage tube before irrigation was begun. On the first two days the amœbæ were quite numerous and very active. For the three following days they were still found, but moving forms were not so common, probably owing to the fact that stronger solutions of bichloride were used for irrigation. Subsequently they were very numerous, and we found them each

day in the pus as it came from the drainage tube until his death on April 5th.

After the operation the dysenteric symptoms did not abate in the slightest ; he continued to have from eight to sixteen movements daily. They varied a good deal in character ; some were entirely mucoid, streaked here and there with pus and presenting a few grayish shreds. Some were made up of a greenish, pultaceous mass, in which, on several occasions, there were large irregular sloughs. These mucus stools were usually slight in amount. Occasionally there was a large brownish liquid evacuation, in which could be seen small grayish-white masses embedded in blood-stained mucus. On each day there were found in these stools many characteristic examples of the amœbæ. They were most abundant in the small grayish-white shred masses, which in some places seemed almost infiltrated with them.

Description of the Amœbæ.—(1) From the liver. The size ranged from 10 μ. to 20 μ., which appears to be somewhat greater than indicated by Kartulis. When at rest the outline was usually circular, occasionally ovoid, but when in motion they presented, as shown in the figures, the extreme irregular contour of moving amœboid bodies. The protoplasm could be distinctly differentiated into a translucent homogeneous ectosarc or motile portion and granular endosarc containing the nucleus, vacuoles and granules. The hyaline ectosarc was, as a rule, very distinct, and in many examples the granular protoplasm of the interior was surrounded by it as a distinct rim. Occasionally a form was seen in which this portion was much less developed and the greater part of the organism seemed composed of granular substance. Within the endosarc, the vacuoles constituted the most striking feature. Sometimes the interior substance appeared to be made up of a series of closely set, clear vesicles of pretty uniform size. As a rule one or two larger vacuoles were present, the edges of which were not infrequently surrounded by fine dark granules. I never saw a true contractile vesicle which displayed rhythmical pulsations but the larger vacuoles underwent at times changes in size. The nucleus was plain enough in some examples, in others very difficult or impossible to detect. It was usually

pale, ovoid or rounded in outline, and with a very delicate contour. No distinct nucleolus was seen, though there were sometimes coarser granules which possibly represented it.

When once recognized, there was not the slightest difficulty in distinguishing these bodies, even when at rest, from the pus elements, not only by their size but by the entirely different appearance of the protoplasm. The movements, however, constitute their most interesting and distinctive feature. From any portion of the surface, a rounded hemispherical knob would project and with a somewhat rapid movement, the process extended and the granules in the interior streamed towards it. As in the pond amœbæ, the clear ectosarc seemed to initiate and play the important part in the movements. Though sometimes slow, many examples were found in which the alterations in contour and the change in locality were quite as striking as in the large active forms of pond amœbæ. The processes were always rounded, never angular or linear as in the white blood corpuscles. Motile forms were found each day in the pus during his life. They seemed at times more active apparently than at others, and the movements went on at the average laboratory temperature, but seemed increased by heat. They continued active for hours at a time. Twice the movements were observed to continue in the same organism for more than ten hours.

(2) The amœbæ from the stools. During the month or more in which the patient was under observation the diarrhœa was a marked feature. Tenesmus was rarely present, and the frequency of the stools was from four to twelve in the twenty-four hours. The character varied very much. Sometimes he had a large brownish fluid evacuation with little or no mucus; more frequently three or four ounces were passed at a time, and, scattered through the brownish liquid mucus, blood and small whitish sloughs could be seen. On several occasions the stools seemed to be made up of a gelatinous mucus streaked with blood, and twice large grayish sloughs were found. Experience showed that the amœbæ were rarely found in the brownish liquid stools. In the mucus they were more frequent, but they were met with in large numbers only in the small grayish fragments, portions,

no doubt, of sloughs which were present in variable numbers in almost every mucoid stool.

The general character of the amœbæ corresponded in every particular with those found in the liver. A greater variation, perhaps, in size was noticed, but in the appearance of the protoplasm, the character of the movements, and the arrangement of the vacuoles, no essential difference was noted.

It is impossible to speak as yet with any certainty as to the relation of these organisms to the disease. The subject is deserving of extended study, and a point of special interest will be the determination of their presence in the endemic dysentery of this country.—*Johns Hopkins Hospital Bulletin.*

On the Surgical Treatment of Tuberculosis of the Pleura and Lung. (By Prof. Tillmanns, M.D., Leipzig.)—At the Congress of German surgeons held this year at Berlin, I showed a patient whom about two years previously I had completely cured of severe tuberculosis of the left pleura and left lung by extensive resection of the front part of the left chest wall. The tuberculosis of the left pleura and left lung was made accessible for purposes of local surgical treatment by removal of the fore part of the left chest wall, which was also affected with tubercular disease. The heart was displaced to the right behind the sternum as the result of an empyema of more than two years standing. After the cure of the tuberculosis of the left pleura and the left lung, I converted the left pleura into a cutaneous cavity by transplantation of skin according to Thiersch's method. The healthy right lung and the heart, which still remains displaced to the right, now act so well that the patient, in spite of the loss of his left lung, has since about September, 1888, been able to attend to his business as a merchant quite in the same manner as before. My observation is also of interest with reference to the operative treatment of tumors and others diseases of the pleura and lung. The editor of the *British Medical Journal* has invited me to report on the case to which I have referred. I hereby very gladly

comply with the request, and I propose to add some remarks on the surgical treatment of diseases of the lung and pleura.

In the first place, with regard to the history of the above mentioned case, the following are the chief points. The patient, who is now 28 years of age, came under my care on April 19th, 1888. He presented the appearance of one in the last stage of phthisis. The left lung was phthisical to a high degree, the pleura being firmly adherent in its upper third; in the sputum numerous tubercle bacilli were found. In the two lower thirds of the left pleural cavity there was an empyema which had been in existence for two years and a half; several fistulæ traversed the left front chest wall, which was also the seat of tubercular disease. As a result of the left-sided empyema, the heart was dislocated to the right behind the sternum. The right lung was comparatively healthy, and acted well. In the middle of October, 1885, the patient became affected with serious left-sided empyema, and after that time (that is to say, for more than two years and a half) he was, with few exceptions, confined to his bed.

In November, 1885, about three litres of pus were removed by means of puncture (thoracocentesis). In September, 1886, and January, 1888, thoracotomy, with resection of a piece of rib at the lower and hinder part of the thorax, was performed by a practitioner in Saxony. When the patient came under my care in April, 1888, I first sought to cure the existing left-sided empyema by means of extensive rib resections—from the second to the sixth rib on the left side in front, and of the seventh, eighth, and ninth ribs on the left side behind—of course with slight hope of success, since the left lung was already the seat of serious tubercular disease. As the patient was becoming steadily weaker, and had no prospect but that of a speedy certain death before him, I determined to expose the tuberculosis of the left pleura and left lung by extensive resection of the anterior part of the tubercular left chest wall—ribs as well as soft parts—and subject it to energetic local treatment. In this manner the left lung would certainly be placed completely, and probably for ever, *hors de combat*, and the patient would have to be contented with the work of his right lung alone. But the left lung was

extensively diseased, and had been functionally incapable for months, and the patient had, in fact, been for months entirely dependent on his healthy right lung. But too long waiting the right pleura and right lung would also become tuberculous. On May 27th, 1888, therefore, the front part of the left chest wall, tuberculous and riddled with fistulæ as described, was resected *in toto* for an extent of from 5 to 12 centimetres, from the second to the sixth rib, close to the left sternal border. The breadth of the portion of the thoracic wall removed was 5 centimetres at the upper part; it became wider from above downwards, and measured 12 centimetres in breadth at the lower part. The whole of the left pleura was tubercular to a high degree; the left lung was phthisical and only as large as a man's fist, and was firmly adherent at the level of the first rib. The left lung was partly covered by a pedunculated skin flap taken from the thorax, in such a manner, however, that it remained accessible to local treatment. The left pleura was energetically scraped with a sharp spoon, and then stuffed with iodoform gauze. On June 22nd the left pleura, after repeated previous scraping with the sharp spoon, was converted into a cutaneous cavity by transplantation of skin according to Thiersch's method. Local treatment of the left lung proved unnecessary in the further course of the case. The organ shrank together steadily more and more, and the tuberculosis, of which it was the seat, underwent a process of spontaneous cure in consequence of this shrinking. The patient was discharged cured on July 23rd, 1888. He has remained quite well up to the present time. He can attend to his business as a merchant as before his illness, and presents a blooming appearance. When I saw him again for the first time some time ago I did not recognize him at the first glance, so stout had he become. The left lung, entirely collapsed, can be felt in the upper part of the left side of the thorax, at the level of the first rib behind the flap of skin which partly covers it; it is quite inactive. The right lung is absolutely healthy; the heart is still displaced to the right. The left pleura is a skin cavity of the size of a man's fist and covered with epidermis. In speaking and on deep inspiration the mediastinum is arched to the left.

At the lower part of the mediastinum—that is, the median wall of the skin cavity—the movements of the heart can be seen and felt. The strength and movements of the left arm are not impaired, but perfectly normal.

I recommend that in similar severe cases of one-sided tuberculosis of the pleura and lung the same procedure should be adopted as I carried out in the case related—that is to say, the seat of disease should be exposed sufficiently for local surgical treatment by free resection of the chest wall in front or behind. In suitable cases the performance of a temporary resection of the chest wall may be recommended. A pedunculated flap of skin and bone is formed, and turned back, and afterwards when the disease of the pleura and lung is cured, the thoracic coverings are replaced in their original position. One can also proceed in such a manner that, after extensive resection of the ribs, the soft parts in the chest are divided in the direction of the lung, the two flaps of soft tissues drawn apart with wound hooks, the pleura and lung subjected to adequate local treatment, and then the soft tissue flaps united to the pleura by compression. In my above related case I was obliged to remove the anterior part of the left chest wall *in toto*, as it also was extensively diseased.

Our case teaches further, in my opinion, the manner in which unilateral tumors of the pleura and lung may best be removed. In these cases, likewise, the pleura and lung should be exposed by total or temporary resection of the chest wall or by resection of ribs with division of the soft parts of the thorax in the direction of the lung; and then later on, by a second operation, the diseased lung, which is by this time collapsed, should be removed, and the tumor extirpated or destroyed with Paquelin's thermocautery.

Recently I have also treated pulmonary phthisis by injections of iodoform glycerine and iodoform oil. I use 10 per cent. sterilized mixtures of iodoform glycerine or iodoform oil, which I inject into the lungs to the amount of five grammes, with antiseptic precautions, through an incision in one of the intercostal spaces. I have not found it advantageous to inject more than

five grammes. At first I made the injections under chloroform narcosis; now I make them without an anæsthetic. Beyond ordinary dyspnœa, which quickly passes away, I have seen no injurious effects. I always make the injection into one lung only, never into both at the same time. I usually perform the injections at intervals of from one to two weeks; in slighter cases I make them every three or four weeks. With regard to the real advantages of these injections of iodoform into the lung I cannot as yet make any positive statement; I have not yet tried the method long enough, or in a sufficiently large number of cases. What I have seen up to the present, however, encourages me at all events to continue the treatment of pulmonary tuberculosis by injections of iodoform.—*Brit. Med. Journal*, June 14, 1890.

Myxœdema and Co-existing Exophthalmic Goitre.—In a critical review by P. Kovaleski of "Myxœdema or the Pachydermic Cachexia," contained in the *Archives de Neurologie*, November, 1889, there is given an interesting history of this unfortunate combination. The patient, an only child, 46 years old, had the poorest kind of a chance in point of heredity. Her paternal grandfather was a drunkard, and died in an insane asylum. Her father committed suicide at the age of 25, a victim to melancholia. The mother was an epileptic. At 14 the patient talked and walked in her sleep, though strong and well during childhood. The girl married at 18, very unhappily. Three or four attacks of epilepsy a year (*petit mal*) began now to manifest themselves. At 24, one attack was followed by automatic acts, such as attending to household affairs, going out, making purchases, of which she had no recollection. Once or twice a year this happened; and when the woman was about 32 this psychic automatism became of longer duration, lasting eighteen hours, during which time she was irritable, quarrelsome, and even violent. She had hallucinations and moments of terrible anguish and anxiety. When 40 years old the patient left her husband, became poor, and began to earn her own living. Periodic tachycardia now set in, and later became violent and continued. In two years exoph-

thalmia appeared ; and eighteen months afterward, enlargement of the thyroid. She was sometimes better, sometimes worse, with frequent attacks of epileptic violence. During these attacks the symptoms of Basedow's disease were intensified, and became less pronounced when the seizures disappeared. The patient was carefully examined during a paroxysm of epileptic violence and the following conditions noticed : Feet and legs swollen from the ankles up to the knee ; skin stretched and dirty yellow in color, shining, and denuded of hair, cold and dry to the touch ; sebaceous and sudorific secretions absent. There was pitting or rather displacement on pressure, for the depression made by the finger disappeared when it was removed. The only heart symptom was acceleration of its beat (120–140). The urine was non-albuminous, of yellow tint, acid reaction, and containing a considerable quantity of urates (1015). Swelling similar to that in the feet existed in the cheeks and lips. The eyelids were much wrinkled, but not swollen. Hair on the head had become thin, and there was none whatever in the axilla. These symptoms, together with poverty of blood, insomnia, hallucinations of sight and hearing, manifestations of fear and terror, complete "absence," and a tendency to violence made up a picture of sufficient misery. This was succeeded by tranquillity in about three days. But her peaceful condition was not one of quiet, not post-epileptic depression. There was confusion of mind, indistinctness of speech, indifference, loss of facial expression, and general stupidity. Warm baths, galvanism (subaural), quinquina, small doses of arsenic, and somewhat energetic treatment, slowly brought about improvement. In three months all swelling had disappeared, and her psychic state became natural. What remained, however, were anæmia and exophthalmic goitre.

The patient stated that five or six months previous to this last attack she began to be so weak, broken and exhausted, that her only desire was to stay constantly in bed. Thinking was difficult, or, to be more exact, she had no desire to think. Physically, she was not ill. The temperature was subnormal, and weariness so great that walking or working became almost im-

possible. She would sit down anywhere, thinking of nothing, and completely broken up. The swelling of the hands was not always present. Without known cause she lost eight teeth during the second month of her illness. Appetite and digestation remained good. There was no perspiration or oily secretion. The tongue became swollen, the saliva abundant, sticky, and thick. The patient always complained of feeling cold, especially in the parts that were swollen. There was but slight change in the thyroid gland at any time. It was a little larger during the epileptic delirium.—*Journal of Nervous and Mental Disease.*

Effects of a Very Large Dose of Antifebrin.—A number of cases have been recorded showing that even moderate doses of antifebrin or acetanilide may be followed by toxic symptoms, but no case has until now been reported in which nearly an ounce of this drug had been taken. It has generally been supposed that the toxic properties of acetanilide are due to the aniline from which it is manufactured, and it was therefore to be expected that the symptoms occurring in the two cases would be very similar. Dr. Hartge, of Dorpat, who has recently had ample opportunities of observing a case in which a student, who had caught cold, had dosed himself with with twenty-eight or twenty-nine grammes (nearly an ounce) of acetanilide, in addition to a considerable quantity of spirit, states that the symptoms only very partially corresponded with those mentioned by Dr. Dehio as due to poisoning by 154 grains of aniline, and which consisted in blue coloration of the skin and mucous membranes, profound coma lasting several days, irregularity and quickening of the respiration, acceleration of the pulse, the smell of aniline in the breath, loss of power of motion, considerable disturbance of the sensory powers, followed by jaundice, with anæmia, albuminuria, and hæmoglobinuria. It is probable that this aniline was by no means chemically pure, but contained several other substances, especially toluidine. In Dr. Hartge's case, notwithstanding the enormous dose of acetanilide which had been taken, a quantity which requires five-sixths of an ounce of aniline to make it, or more than twice as much as Dr. Dehio's

patient took, there was no loss of consciousness, of motion, or of sensation, no albuminuria or hæmoglobinuria, and only the slightest trace of jaundice; the blood corpuscles, too, presented their normal appearance and character, there being no detritus or specks of pigment, though the color of the blood was changed to a dark blue, as in aniline-poisoning; also the respiration was rendered rapid and irregular, and the pulse accelerated. The patient complained greatly of inability to sleep, and the cardiac palpitation and dyspnœa produced a feeling as of impending death. No medical aid was sought for many hours after the drug had been taken. When Dr. Hartge saw the patient first he was much struck by the marked blueness of the skin, which was general over the whole surface, but especially dark in the eyelids, the chin, and the temporal regions. There was no puffiness, as in severe cases of asthma, and the general appearance was quite different from that of cyanosis. Although there had been no vomiting, a glass of red wine was immediately brought up, and the stomach was soon afterward thoroughly emptied, a quantity of bilious matter being evacuated. The treatment consisted in giving sulphate of soda draughts, together with coffee and brandy; also hypodermic injections of camphor in ether, and cold compresses to the head. On the third day the patient was able to leave his bed, and the blue color had entirely vanished. In conclusion, Dr. Hartge, who had Professor Dragendorff's co-operation in working out the case, remarks that there is reason to believe that the acetanilide taken by the patient must have been a remarkably pure specimen.—*Lancet*, April 12, 1890; *Amer. Jour. of Med. Sciences*, July, 1890.

The Treatment of Vesical Calculus in Male Children.—In considering the treatment of vesical calculus in male children Dr. J. William White (*Medical News*, May 17, 1890) shows that the most powerful argument against the modern operation of litholapaxy—that is, the liability to recurrence—obtains mainly in the aged or in those suffering from marked pathological conditions of the bladder or prostate. In children the bladder is usually healthy and the prostate undeveloped. The urethra is proportionately as capacious as is the

case in the adult, and will generally admit, after meatotomy, a No. 16 (French) lithotrite. Among other objections to lithotomy may be urged the fact that there are reported cases of emasculation following the perineal cut, and that statistics show a greater mortality than obtains in the crushing operation. The author believes the following conclusions in regard to the choice of operation in male children justifiable :—

1. In every case of calculus in male children litholapaxy, on account of ease of performance, low mortality, speedy recovery, and absence of danger of emasculation, should be the operation of predilection, division of the meatus being freely resorted to if that portion of the urethra offers an obstacle to the introduction of instruments.

2. The lithotrite and evacuating tube should be of a size which can be inserted into the bladder without much effort or overdistention, and great gentleness should be observed in passing these instruments.

3. They should be withdrawn and reintroduced as seldom as possible, the stone being finely pulverized before the lithotrite is taken out at all. In seeking for or attempting to seize the stone, care should be taken to avoid such wide separation of the blades as will bring the male blade in frequent contact with the vesical neck. The crushing should invariably be done only after rotating the blades into the centre of the bladder. Every particle of the calculous dust should be evacuated.

4. Rest in bed, milk diet, and sterilization of the urine by boric acid or salol given internally both before and after the operation are valuable adjuvants. During the operation every antiseptic precaution should be observed.

5. The exceptional cases of calculi which are both large and hard may be best treated by suprapubic lithotomy, but neither unusual size nor a moderate degree of density should of itself alone be thought positively to contraindicate litholapaxy.

6. Perineal lithotomy has now a very limited field, and should be employed chiefly in those cases of stones thought to be of small or medium size in which no lithotrite, however small, can be introduced with safety.—*Amer. Jour. Med. Sciences.*

The Treatment of Wounds and the Choice of Material for Drains and Ligatures.—At the seventh reunion of the Italian Surgical

Society the subject of wound treatment and the choice of material for drains and ligatures was discussed by a number of the members. Bassini stated that the employment of sponges was unadvisable, not only on account of the expense, but particularly because of the difficulty of accomplishing through sterilization. Wads or compresses of moist cotton should also be rejected, since small threads of filaments are frequently left in the wound, and the same difficulty in accomplishing sterilization obtains as is the case in regard to sponges. He recommends balls of salicylated cotton packed in sterilized gauze, and purified by means of dry heat. In relation to the substances employed for ligature and suture, althouth catgut is to be preferred from the fact that it is homogeneous with the tissues of the living organism, unfortunately it cannot be sufficiently disinfected, since it will not withstand the action of heat. Silk, however, is very readily sterilized, and in general should be preferred to catgut. Drainage is indicated only in those cases where it is impossible to close pouches and divirticulæ by the approximation of their surfaces, accomplished by the buried suture, or where infection is imminent. As to the choice of disinfecting substances it is impossible to speak authoritatively, since no medium has yet been found which is satisfactorily efficacious against each particular form of infection. Gauze sterilized by dry heat and salicylated cotton to be applied immediately to the wound, with thick layers of non-medicated cotton placed over this, represent the best means of protecting wounds from post-operative infection.

Novarro, while conceding that sponges should not be employed, objected to the use of silk in buried sutures, and in cases of resection of the viscera. Here catgut is preferable. If previously sterilized in a solution of sublimate, 1 : 100, it will not give rise to infection. When there is imperfect hæmostasis, or the formation of cavities cannot be avoided, tamponade with iodoform gauze, followed by secondary suture of the wound will give the best results.

Ceccherelli stated that the double cyanide of zinc and mercury used as a disinfectant has given good results. This substance is perfectly aseptic, and exercises neither a toxic nor an irritant action upon the tissues. Its antiseptic value has not yet been determined.

Corradi also objects to the use of sponges. He substitutes

them by gauze sterilized by dry heat. Where drainage is necessary, he prefers glass tubes, since these are readily purified. He has always attached more importance to the size of the suture or ligature than to its composition, since the smaller the thread the more readily is it rendered aseptic. For this reason he prefers silk, which he soaks for upward of a year in an alcoholic sublimate solution, 1 : 1000. This solution is renewed every two or three months. Alcohol is employed in place of water because the latter diminishes the strength and consistency of the thread. When it is necessary to use coarse silk this should be subjected to the action of moist heat for thorough sterilization of the central portions, afterward it may be preserved in the alcoholic and sublimate solution. Though dressings need not necessarily be antiseptic, they must be absolutely sterile; this Corradi accomplishes by subjecting them to a temperature of 38° F. for two hours. A quantity of gauze sufficient for the dressing is placed in a metallic box, this is hermetically sealed, is left in the oven for the required time, and is not removed from its box until the surgeon is prepared to apply it directly to the wound.—*Ibid.*

Lavage of the Peritoneal Cavity.—Delbet (*Annales de Gynécologie*, September, 1889) concludes, as the result of elaborate experimentation upon lavage of the peritoneum, that the liquid used for irrigation should penetrate to all parts of the peritoneal cavity. If it is desired to wash out Douglas's cul-de-sac the trunk of the patient can be elevated, and the intestinal coils which have not been involved in operation or smeared with blood or discharges can be protected by sponges. It is difficult, if not impossible, to free the peritoneum completely from the foreign substances which have entered its cavity by means of lavage. In case of escape of septic liquids into the peritoneal cavity, the operator should at first employ an aseptic irrigation, and this should be followed by one with antiseptic properties. After these irrigations there always remains a considerable quantity of liquid in the iliac and lumbar fossa. The temperature of the liquid used may vary between 64.5° and 122°F. without producing any marked effect upon either respiration or circulation. The temperature should always be that of the cavity itself, though very hot irrigations have been

employed for their hæmostatic action. That such effect is produced by them is extremely doubtful. During the first minutes of intraabdominal irrigation there is a very considerable quantity of the liquid absorbed; when a normal saline solution is used this practically amounts to a veritable transfusion. The peritoneal cavity may be washed by toxic substances without danger of general poisoning, provided the toxic irrigation is preceded for ten minutes by one of a solution of chloride of sodium of the strength of seven per cent. and is followed by a third lavage with the same solution.—*Ibid.*

Surgical Treatment of Local and of General Peritonitis originating from the Appendix Vermiformis.—The subject of peritonitis, as caused by inflammation, and particularly by perforation of the vermiform appendix, is exhaustively considered by Dr. A. Krecke (*Deutsch. Zeitschrift f. Chirurgie*, Bd. 30, April 10, 1890). He states that the variety of appendix diseases which leads to peritonitis is the perforative. This perforation arises from ulceration beginning in the mucous membrane, which traverses the whole thickness of the intestinal coats and finally causes sloughing of the serosa. This ulcerative process is nearly always caused by the formation of concretions in the lumen of the appendix; rarely foreign bodies act in the same way. Where no cause for ulceration is found it is readily conceivable that a concretion might have been present, this having been washed away with the exudate.

It is well recognized that these perforations give rise to markedly different symptoms in accordance with whether they develop suddenly or are of more gradual formation. If the process is slow the peritoneal surfaces surrounding the inflamed area have time to form adhesions, so that when the opening into the bowels is finally accomplished, simply a circumscribed inflammation of the peritoneum results. When, however, there is a sudden perforation the contents of the appendix are freely distributed into the general peritoneal cavity, and as a result general peritonitis sets up.

It is to be noted that perforative peritonitis dependent upon disease of the appendix occurs, almost without exception, in individuals who were, up to the time of their attack, in good

health and in full possession of their bodily strength. It is self-evident that such an individual is far more able to endure, not only the exhaustive effect of the disease, but also the shock of an operation, than is one who has passed through a long period of exhausting disease. The outlook for success after operation is in the former most favorable.

A further noteworthy peculiarity in appendix peritonitis is dependent upon the anatomical relations of this portion of the intestines. For instance, if there is a perforation in any part of the small intestine, the free motion of this portion of the alimentary tract causes wide distribution of the intestinal contents, so that the infection of the peritoneum becomes at once general. The appendix, however, is far less movable than the small intestine or even the stomach itself; therefore, its contents, even if discharged, will be found only in the portion of peritoneum immediately circumjacent. It can also be readily seen that a much smaller quantity of septic matter can escape from an opening in the appendix than where the bowel itself is wounded.

Clinical facts strongly confirm the truth of these propositions, since in no portion of the abdominal cavity is local peritonitis more common than in the right iliac region.

In considering the inflammation of the peritoneum under discussion, a knowledge of the two forms described by Mikulicz is of great importance. Mikulicz states that upon perforation of the bowel, either the whole peritoneal cavity is at once infected, or the peritoneum lying immediately about the perforation is alone involved. The first form of general inflammation he calls diffuse septic peritonitis. This is characterized by a virulent course. The second form he names progressive fibrino-purulent peritonitis; in this the suppurative process slowly sextends, the new masses of pus becoming successively encapsulated. From an operative standpoint, a distinction between these two different forms of peritonitis is of cardinal importance, since in the first an extensive opening of the belly, with elaborate disinfection and drainage, is indicated; while in the second every precaution must be taken not to disturb the adhesions which protect the general peritoneal cavity from the local process.

Another most important point in the consideration of appendix peritonitis, is the fact that the diagnosis is usually

made with great ease. Together with the general symptoms of peritonitis there is usually a history of pain beginning in the right iliac fossa. If the patient is a child, this is an additional reason for suspecting appendicitis, since the age of childhood is most prone to this form of perforative peritonitis.

From the foregoing points it will be seen that this form of peritonitis gives promise of far better results than can be hoped for from inflammation dependent upon perforations of other portions of the alimentary canal.

On first sight, it would seem that a careful review of the published cases might give us statistical results which would definitely determine the value of operation in these cases. Such a study can, however, be of little service, unless cases are reported with far more care than has hitherto been observed; for in making comparisons, not only must the form of peritonitis be clearly indicated, but the stage in which operative procedure was undertaken, since in the beginning of an attack the prognosis is far better than where the knife is used only as a last resort. Krecke records two operative cases ending successfully, one of general, the other of local peritonitis, and each dependent upon perforation of the appendix. He notes that the diagnosis was in each case easy, depending in the main upon the seat of pain and tenderness at the beginning of the attack, and being further corroborated by the fact that both patients were children.

Especial attention was paid, before operation, to determine whether or not there was free gas in the peritoneal cavity. The liver dulness was in one case completely abolished; nevertheless, on laparotomy, the presence of gas was not confirmed. This is a further proof of the fact that liver dulness can be made to disappear by metorism. According to Leube, escape of gas can only be diagnosed when, on placing the patient upon his left side, tympanitic resonance is found occupying the normal area of liver dulness in the axillary line. The distinction between a diffuse septic peritonitis in one case, and a progressive fibro-purulent form in the other, was comparatively easy, since one exhibited in twenty hours the most violent symptoms of a general purulent peritonitis, while the other, after two days, showed symptoms of very moderate severity. In both cases the therapeutic indications were plain; excision of the diseased vermiform appendix offered the only

hope of cure. In the case characterized by a diffuse peritonitis this was accomplished, but in place of suturing the opening into the bowel left after excision, the latter was simply ligated, as it was believed that recovery was impossible, and every means was used to hasten the completion of the operation lest death should take place on the table. When, however, the child improved, the parts were inspected with the object of replacing this ligature by a careful suture; adhesions seemed to have successfully accomplished the closing of the bowel end; these subsequently broke down, and a secondary operation was required for the closing of the opening in the vermiform appendix. In the second case great care was taken not to break up any of the limiting adhesions.

It has been claimed that the purely local form of peritonitis resulting from ulcerations which are slow in their extension is amenable to medical treatment, and that the results of such treatment are far better than can be promised by the use of the knife. It will practically be admitted that appendicitis is identical with a circumscribed peritonitis. The question of operating upon these cases will depend more or less upon the presence or absence of pus. The question as to whether in every case of perityphlitis a collection of pus can be diagnosed, is one of prime importance. The testimony of various authors differs in regard to this point. Krafft found that every one of 106 cases of perityphlitis were accompanied by pus. Holländer believes that of 80 cases which were treated and cured pus was present in all. Leyden, however, claims that an exudate only is present in the early stages of perityphlitis, and that the treatment should be designed for the purpose of preventing the occurrence of suppuration. Krecke believes that in all these cases there is abscess formation, though he admits that possibly there may be exceptions. If perforation occurs, suppuration invariably follows. There are cases in which the ulcerating process does not extend to the serosa, and simply causes a more or less extensive adhesion of peritoneal surfaces. Even in these cases excision of the vermiform appendix is imperatively demanded, since thus the danger of later perforation is avoided. Holländer states that of his 80 cases treated medically not a single one terminated fatally. Though surgery can as yet show no such results, it must be admitted that these statistics are exceptional.—*Ibid.*

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THE TRAINING SCHOOL FOR NURSES OF THE MONTREAL GENERAL HOSPITAL.

The function of the modern hospital is three-fold, firstly, the healing of the sick; secondly, the education of those who are to become medical practitioners; and, thirdly, the training of young women for the important calling of nursing the sick. The Montreal General Hospital has performed the two first duties nobly and well, but in the matter of providing instruction for nurses it has lagged behind other less useful institutions. True, some years ago an attempt was made to establish a school, which failed owing to several causes which need not here be mentioned. The want of a nurse's home for a long time formed an obstacle which has now happily been removed by the building of most comfortable quarters for the pupils in training. Last March the Committee of Management entrusted the establishment of a training school to Miss Livingston, a Canadian, who had received her professional training in the wards of the New York Hospital. Under her able management the school is now beginning its work. Many of the old nurses have joined the school and after a year's training will receive their diplomas, their former services being accepted as equivalent to one year's work in the school. What would be called elsewhere, the freshman class of the current half year is now complete, and no doubt a very large number of young women will apply for admission into the next class, which will be organized during the present summer.

The pupils must be between twenty-five and thirty-five years of age, and must show evidence of having had a good school

education. During their two years apprenticeship a money allowance will be made to them sufficient to cover the expense of uniforms, text-books, etc., and they will receive board, lodging and washing free of charge. In addition to the practical bedside instruction always going on in the ward service, lectures and demonstrations will be given by the members of the medical staff. After this course of sound training young women will be ready either for the duties of private nursing or for the serious responsibilities of the charge of large institutions.

Before long the public will begin to derive direct benefits from the nursing school, for a register of the graduates will be kept, and patients in both town and country will be able to obtain, at the very shortest notice, the services of a reliable trained nurse.

It is a remarkable fact that very many of the largest hospitals and training schools of the United States are managed by Canadian women, notably the Johns-Hopkins School at Baltimore, the Cook County Hospital at Chicago, the St. Luke's Hospital in Chicago, and the Charity Hospital at Blackwell's Island.

Surely Canada ought to produce good nurses from her own training schools when those of her daughters who go abroad are found in such responsible positions.

CANADIAN MEDICAL ASSOCIATION.

The twenty-third annual meeting of the Canadian Medical Association will be held in Toronto, on the 9th, 10th and 11th of September next. It is hoped that a large number of members from Montreal will be present. Arrangements will be made with railway and steamboat companies for a reduced travelling rate, and certificates enabling members to obtain such a reduction will be issued by the Secretary, Dr. James Bell, on application.

Members intending to present papers at this meeting are requested to notify the Secretary, at as early a date as possible, of the title of the paper intended to be read.

EDITORIAL NOTES.

Improvements at the Montreal General Hospital.—Since the day of its foundation the old M. G. H. has never been in such an efficient condition. Within the last twelve months changes have occurred here and there which give the impression that the venerable institution has aroused itself from its Rip Van Winkle-like condition and wishes to show that it has merely been drowsy and is not yet moribund. The infectious department has been entirely rearranged, and is now, under the management of Dr. Corsan, in excellent condition, affording comfort and good treatment to patients, as well as clinical instruction to students. The nursing we have already alluded to. The out-door department has been greatly enlarged and extended, the nurses' old quarters in St. Dominique street having been converted into rooms for the use of specialists and others. In the wards great changes are observable. They are cleaner, brighter, and have a more business-like appearance than they ever had before. The nurses appeared in the new M.G.H. uniform for the first time on Sunday, June 22nd, a composition of pink and white gown, with neat cap and badges, all æsthetic and antiseptic. The house staff are turned out in white patrol jackets. Everything is as bright and clean as on a man-of-war. The former crew of the old ship had better visit Montreal before reform has altogether effaced the familiar outlines of the old structure.

The American Journal of the Medical Sciences.—After many years service, during which this journal has enjoyed the utmost popularity and success, Dr. I. Minis Hays has retired from the editorial chair. His successor is Dr. Edward P. Davis of Philadelphia, who will shortly take the management. The lines on which the *American Journal* has been guided will in no wise be changed, save that it will assume a more practical character.

Obituary.

—We regret having to report the death of Dr. Joseph Howe of New York, who died on board the steamship *Umbria* on Saturday, 7th June. The deceased was well known to many Canadians, being a native of New Brunswick, and was a graduate of the Medical Department of the University of the City of New York, of the class of 1866, and surgeon to Charity and St. Francis's Hospital. Dr. Howe was a surgeon of marked ability and a man of excellent qualities.

Personal.

—Drs. George Ross, James Stewart, T. G. Roddick, Wm. Gardner, Stirling and A. A. Browne have sailed for Europe to attend the Berlin Congress.

—Dr. A. Fisher Ritchie, a graduate of the class of 1876, who has been for some years practising in Duluth, Minnesota, is now in Montreal visiting his relations.

—Dr. F. N. Burrows has been appointed a member of the new Board of Medical Examiners for the State of North Dakota. Dr. Burrows is a graduate of McGill. The new law closely resembles that of Ontario.

Medical Items.

—The Provost of the University of Pennsylvania announced at the recent dinner of the medical alumni that the compulsory course for the medical degree in that University had been lengthened to four years.

—Cardinal Lavigerie is having negroes trained as medical practitioners at Malta, and several have already completed their education and proceeded to Central Africa.

—Dr. Laveran, of the Val-de-Grâce Hospital in Paris, has received a prize from the French Institute for his researches on the hæmatozoa of malaria.

—A recent report of the St. Petersburg Town Council shows that between May 21st, 1882, and April 1st, 1890, trichinæ were found on microscopic examination in 458 pigs in the slaughter-houses of that city. Trichinæ were also found in 21 specimens of bacon during the same period. During April of the present year alone the carcasses of eight pigs were condemned on the same ground.

Resection of Stomach for Simple Ulcer.—At the recent Italian Surgical Congress, Professor Postempski showed a lad, aged 18, on whom, after every kind of medical treatment had been tried to no purpose, he had excised a "round ulcer" by resection of the anterior wall of the stomach near the pylorus. Examination of the ulcer after removal showed that perforation was on the point of taking place. The patient got up on the tenth day after operation; there had been no return of the vomiting which previously troubled him, and he was gaining weight.

Smallpox Mortality in Sweden.—The statistics of smallpox in Sweden are instructive, as showing in a most conclusive manner the effect of vaccination in mitigating the scourge. From 1774 to 1800 the death-rate from smallpox was 165 per 100,000 of the population. In 1801 optional vaccination was introduced and the smallpox mortality fell to 90 per 100,000 during the following nine years, and to 21 per 100,000 in the six years after that. From 1816, when vaccination was made compulsory, to 1883, beyond which year the official records from which these figures are drawn do not extend, the average death-rate from smallpox has been 18.2 per 100,000 inhabitants. In many single years the rate has been as low as 3, 2, or even 1 per 100,000.—*Brit. Med. Journal.*

Honors to Sir Andrew Clark and Mr. Jonathan Hutchinson.—The ceremony at the Cambridge University "Commencement" on Tuesday last was of more than ordinary interest to the medical profession, from the fact that the presidents of the Royal College of Physicians of London and of the Royal College of Surgeons were recipients of the honorary degree of LL.D. Sir Andrew Clark, president of the Royal College of Physicians,

was welcomed by the Public Orator, Dr. Sandys, as a son of Æsculapius, whose friendly professional relations to Mr. Gladstone might suggest his playing the part of Machaon to the Nestor of English eloquence, or perhaps he might prefer to be compared with that excellent speaker Asclepiades, the friend and physician of the most eloquent Roman of the time, L. Licinius Crassus. In presenting Dr. Jonathan Hutchinson, the President of the Royal College of Surgeons, the Orator said they could not separate him from his brother and immediate neighbor, especially as both these eminent representatives of the two branches of the medical professional had been colleagues as professors at the London Hospital, and were now at the head of their respective colleges.—*Hospital Gazette*, June 14, 1890.

Finger Nail Dirt.—The *British Medical Journal* of May 24th, 1890, says: The progress of bacteriology has shown that aseptic surgery means scientific cleanliness; the same lines of investigation show how very dirty people can be. Seventy-eight examinations of the impurities under finger nails were recently made in the bacteriological laboratories of Vienna, and the cultivations thus produced showed thirty-six kinds of micrococci, eighteen bacilli, three sarcinæ, and various varieties; the spores of common mould were very frequently present. The removal of all such impurities is an absolute duty in all who come near a parturient woman or a surgical wound. It is not enough to apply some antiseptic material to the surface of dirt; the impurity must be removed first, the hand antisepticised after. It is sometimes said that the scratch of a nail is poisonous. There is no reason to suspect the nail tissue; it is more likely the germs laid in a wound from a bacterial nest under the nail. Children are very apt to neglect to purify their nails when washing hands; and this matter is not always sufficiently attended to among surgical patients. Personal cleanliness is a part of civic duty, and, as Dr. Abbott well expressed the matter in his address to teachers, should be taught to school children and insisted on in practice. The facts we have recorded might well form the text for a school homily, especially when any epidemic was in the neighborhood.

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Original Communications.

THE DISTRIBUTION OF LESIONS IN CHRONIC PHTHISIS.*

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The advance in the knowledge of tuberculosis in the last few years has been far beyond that which the most enthusiastic observers could have anticipated. From the first demonstration of Bayle in 1810, of the extensive distribution of peculiar nodules in the various organs and their relation to pulmonary phthisis, from the doctrine of Lænnec in 1825, that in all cases of phthisis the affection of the lungs is tubercular, to the teaching of Villemin in 1865, who first discovered that tuberculosis could be reproduced by inoculation, to the announcement of Koch in 1882, form the great epochs in the history of this disease. I may safely say that no disease in our times has more engaged the attention of the physician, the surgeon, and particularly the pathologist. Energy, observation and investigation have done much in this the age of pathological research. The lungs, the favorite haunt of tubercle, have been subject to this disease as far back as the history of medicine will take us. The bright eye, the flushed cheek, the wasted frame, the lanky hair, signs of its advanced stage, were not unknown to the ancients. But it was not till this century, and particularly towards the latter portion of it, that the mystery has been unravelled, and our thoughts on the subject have become consolidated.

* Read before the Medico-Chirurgical Society of Montreal.

In the past few years pathology has made rapid strides, bacteriology, a new science, has been rapidly developed, and not many years ago Koch startled the whole civilized world by his announcement that he had discovered the germ of tuberculosis, of phthisis. He had unearthed and brought to light the deadly bacillus which for hundreds of years had been doing its pernicious work wrapped up in the blackest obscurity, and fully exposed it to the scrutiny of the medical profession.

The importance of this germ, the importance of the disease which it produces, can be inferred from a quotation which I have taken from Dr. Ransome in his Milroy Lectures, an abstract of which appeared in the *Lancet* of the 8th, 15th and 22nd of last March. "Tubercle," he says, "at the present day carries off annually nearly 70,000 persons in the form of phthisis at ages between fifteen and forty-five, the most useful stages of human existence. It kills more than one-third of the people who die, and nearly one-half between fifteen and thirty-five." A disease so formidable, so generally distributed, and so frequently fatal, has justly demanded our serious consideration.

I would call the lungs the hot-bed of tuberculosis, that part of the animal organism for which the bacillus seems to have a peculiar predilection, invading its substance in a definite "line of march," and leaving in its wake disintegration and death.

Regarding the localization of the lesion in chronic phthisis and its mode of advance, the majority of writers in medical literature seem to be of the one opinion. Walshe, Roberts, Powell, Fagge and others teach that the process generally begins at the apex and extends towards the base. I quote the following from Fagge, as it embodies best the general opinion: "It has long been known," he says, "both to physicians and to pathologists, that the upper part of the lungs are almost invariably affected with phthisis, in whatever form, before the lower parts; and that in all but the most exceptional instances, the disease spreads downwards from apex to base with almost perfect regularity." Something more definite has since been discovered. It has been demonstrated that the lesion does not spread uniformly, or with perfect regularity from apex to base. But "the disease in its

onward progress through the lungs, in the majority of cases, follows a distinct route from which it is only turned aside by the introduction of some disturbing element." The credit of this discovery is due to Dr. J. Kingston Fowler, of London, England, assistant physician to the Brompton Hospital, and late pathologist to the Middlesex Hospital. The doctrine is based upon numerous post-mortems (some six hundred) and an extensive clinical experience. It is from this very able physician, whose skill in the examination of the chest has been the admiration of all those who have come in contact with him in his clinical work, that I have derived the knowledge of the subject which I bring before you. I have satisfied myself of this teaching after many months attendance at one of the largest hospitals for diseases of the chest, the Brompton Hospital, where I have personally examined several hundred cases of phthisis.

It is my intention, in this paper, to lay stress upon those points of Fowler's doctrine which have impressed me the most forcibly in my clinical experience ; and, further, I shall attempt to advance the theory which, after considering the subject, I have thought would best explain why in chronic phthisis the disease follows a distinct route. Sincerely believing that, should this doctrine which I uphold be true, you will admit with me that after a careful examination of the chest the condition of the lungs in chronic phthisis will be as clear to us as though they were exposed to our view : believing the subject interesting, I will proceed, in the hope that I am not trespassing upon your valuable time. Before continuing further, I would like to draw your attention to a few brief anatomical details which are necessary for the further consideration of the subject.

As you are aware, the apex of each lung rises about one inch and a half above the clavicle. In front, nearly the whole of the left side is taken up with the upper lobe, only the lower extremity of the lower lobes appearing anteriorly. On the right side the upper lobe extends to about the fourth interspace ; below this comes the middle lobe, and, as on the left side, only the extremity of the lower lobe is visible. At the back, nearly the whole of the space is occupied by the lower lobes, beginning

about the third dorsal spine; the upper lobes corresponding roughly to the supra-spinous region. I wish to draw your attention particularly to the relation of the septa of the lungs, so as to be able to map out more clearly the relation of the lobes to the chest wall. The importance of this will be apparent later on. Quoting from Fowler: "The septum between the left upper and lower lobes begins about the third dorsal spine and extends obliquely downwards and forwards, crossing the fourth and fifth interspaces, passing behind the scapula and sixth rib in the axilla, to the upper border of that rib in the mammary line. On the right side the line of the septum terminates at the eighth rib, just outside the nipple line. A second septum, starting behind the scapula, just external to the posterior fold of the axilla, runs transversely forwards along the fourth interspace to the middle line, thus forming the middle lobe." We have thus before us the relation of the lobes to the chest.

I will again call your attention to the apices of the lower lobes, whose important part in phthisis has been so little thought of. They begin, as I have shown, at the third dorsal spine and are in relation to the chest posteriorly. It is a long established fact that the apex of the upper lobe—that is, the apex of the lung—is the usual site of tubercular deposit; that it is generally the part to be first affected. But the particular portion of this apex that is usually the site of the primary lesion is not mentioned in the medical literature that I have referred to; nor is the route that the disease follows. It is here that the importance of Fowler's doctrine begins. He has defined two points as the sites of the primary lesion. The one most frequently found is situated from one to one and a half inches from the summit of the lung and nearer the posterior than the anterior surface. On the chest, this corresponds to a point above the clavicle, or immediately below the centre of that bone; posteriorly it is in relation with the supra-spinous fossa. The lesion from this focus, in the first instance, spreads backwards. This truth is of considerable importance clinically. I have myself met with cases where an examination of the chest anteriorly revealed nothing of importance, or possibly doubtful signs, when an examination

of the supra-spinous region has placed the diagnosis beyond doubt. For the practitioner adopting this doctrine, it is evident that an examination solely of the apex anteriorly, at an early stage, may prove unsatisfactory, if not misleading. If I am content with making an examination of the front and upper part of the chest, believing that if there be phthisis the part examined will reveal it, cases will go undiagnosed at a time when diagnosis is most essential. The disease next tends to spread downwards at about three-fourths of an inch from the surface of the lung anteriorly, as demonstrated by Fowler in the post-mortem room; and is mapped out on the chest-wall by a line corresponding to one and a half inches from the inner ends of the first, second and third interspaces. The disease here is made up of new foci, occurring in nodules, with normal lung tissue intervening. Certainly, as the disease progresses, a time will come when, by the softening and extension of these nodules, there will be physical signs of extensive disease anteriorly. But this does not take away from the fact that the disease, in the first instance, occurs nearer the posterior surface and tends to spread backwards. Cases have been met where cavities had formed at the posterior part of the apex when anteriorly nothing but scattered nodules were found.

The other and less frequent site of the primary lesion is in relation with the first and second interspaces, below the outer third of the clavicle. It spreads downwards, and an oval portion of lung is involved. When this is the site of the primary lesion, Fowler has found that the progress of the disease is more rapid. I have not as yet been able to get enough evidence to satisfy myself on this point.

The middle lobe does not take as important a part in the disease as the other lobes. It is rarely primarily affected, and usually after the disease in the upper lobe is far advanced, and often escapes altogether.

The next point at which the disease shows itself, till announced by Fowler, has been totally disregarded in medical literature. It is situated in the apex of the lower lobe of the side primarily affected. The disease occurs here early, long before there is

extensive disease at the apex of the lung. It seems to me plausible that the influences which favor the growth of the bacillus at the apex of the lung also favor its growth in the apex of the lower lobe. The vulnerability of this portion of the lung is based upon abundant evidence both clinically and in post-mortem examinations. Consequently, if we are unanimous in saying that signs of disease at the apex of the lung are of great diagnostic importance, the discovery of the vulnerability of this part of the lower lobe must materially strengthen our diagnosis. As first localized by Fowler, this secondary lesion is situated about one and a half inches below the upper and posterior extremity of the lower lobe, and about the same distance from its posterior border ; which he found to correspond on the chest-wall to a point situated midway between the fifth dorsal spine and the border of the scapula ; from this focus the disease spreads along the interlobar septum. A rough surface marking of this line of invasion is obtained by making the patient place his hand upon the opposite shoulder, when the vertebral border of the scapula in its new position will indicate approximately the line of the disease. The importance in the physical examination of the chest of the early appearance, in phthisis, of this secondary lesion in this portion of the lung cannot be over-rated. It has proved of much satisfaction to me as an aid to diagnosis in some of the cases I have examined. Having examined the apex of the lung, and not being convinced of the physical signs there, we should next examine the apex of the lower lobe at the point indicated, and if signs are manifest, it should at once satisfy us as to the diagnosis. The disease in the lower lobe next progresses towards the base in a manner somewhat similar to that at the upper lobe. We have the appearance of new foci with healthy lung between, the disease advancing in a more or less racinose manner. The extreme base of the lung escapes altogether.

We have so far traced out the localization of the primary lesion in the apex, then the early appearance and localization of the secondary lesion in the apex of the lower lobe, and the progress of the disease from these centres. True to the same law

tubercles next appear at the apex of the lung heretofore free. The disease here has the same localization as in that part of the lung previously affected ; and the lesion grows and advances in the same manner along the same lines. It shows itself usually before there is extensive disease at the apices of the lung first affected. The apex of the lower lobe of that side next becomes involved, usually in a similar way to its fellow on the opposite side. It presents no other peculiarities ; the patient usually dying before the lower margin of the lung is reached. This is the usual distribution of lesions in chronic phthisis, and it is only in chronic phthisis that this route can be anticipated. Cases in which the signs are distributed more or less generally over the chest, not following " the line of march," are usually more acute cases which are running a quicker course, or some chronic case, in the beginning, which for some reason or other has taken on an acute action.

Cases are met with, however, in chronic phthisis in which the disease does not follow this usual course, but it is only the exception which proves the rule. A different site from the usual one of the lesion in the apex of the lung secondarily affected has been in some cases found by Fowler ; it is close to the intercostal septum and corresponds on the chest wall to the superior axillary region. We sometimes find what he calls a crossed lesion. The disease beginning, say, at the right apex, instead of appearing next in the apex of the lower lobe of that side, it appears in the apex of the left lower lobe. Fowler also mentions a case found post-mortem, with evident signs of two separate attacks of phthisis. The old lesions of arrested phthisis occupying the usual site in the upper and in the lower lobe, and below these are recent lesions of a second attack of phthisis, totally separate in point of time from the first.

We come now to what I think is the most important exception to Fowler's doctrine, and that is—basic phthisis. All are unanimous in saying that in chronic phthisis the disease usually begins at the apex ; and all agreed as to the rarity of the primary lesion beginning at the base, the frequency of its occurrence being put down by some statistics as low as one in a little less than five

hundred cases. I lean to the opinion, though possibly difficult to prove in every case, that primary basic phthisis, *per se*, does not exist, but is the outcome of some affection non-tubercular which has materially weakened this part of the lung and left therein a suitable nidus for the bacillus. Among some of these diseases affecting the base of the lungs are the following: pleurisy with collapse of the lower lobes and sinking in of chest wall; pleurisy followed by cirrhosis and bronchiectasis; fœtid and gangrenous processes; chronic pneumonia, etc. A careful history of the case and a thorough examination of the chest must necessarily be of great assistance in the diagnosis of this lesion; and particularly the finding of the disease in any of the usual foci heretofore mentioned. Da Costa, in his work on Medical Diagnosis, says "that many of the reported cases of tubercle affecting primarily the lower lobe of the lung are in reality cases of tubercle following chronic pneumonic consolidation." Furthermore, he says "that in these cases, as the disease advances, a deposit takes place in the apex of the lung previously sound; so long as this is not involved there is reason to conclude against the tuberculous character of the deposit." When it is found, it is my belief, which I have previously mentioned, that the cause of this inversion in the course of chronic phthisis is due to some other affection which has materially interfered with this portion of the lung. I conclude the first part of my paper, repeating Fowler's doctrine "that chronic phthisis in its onward progress through the lungs, in the majority of cases, follows a distinct route, from which it is only turned aside by the introduction of some disturbing element."

I have frequently asked myself, Why it was that the disease followed this regular march? Certainly this usual course that it takes cannot be put down as purely accidental. What are, then, the influences? Admitting that some constitutional change is required before the bacillus finds in the lungs a suitable habitat, it is my belief that the bacillus in chronic phthisis will seek those parts of the lungs, and grow, where it will be the least disturbed by the respiratory movements. No theory to me seems better calculated to explain the course of the disease in

the lungs, which I have set forth in this paper; and no theory would better explain the exceptions that occur. The tidal air becomes the vehicle of the virus; and as the forces exercised upon the ebb and flow of this air vary in different parts of the chest, so will these forces vary in different parts of the lungs.

The two great forces of respiration are the mobility of the thoracic cavity and the elasticity of the lungs. The thorax, as we know, is so constructed as to become a potent factor in respiration; the length, obliquity and mobility of the ribs increasing from the first to the seventh; the more or less fixity of the first and second ribs, both by their anatomical formation and the action of the scaleni muscles; the articulation of the ribs to the vertebræ and indirect attachment to the sternum by means of elastic bands, the costal cartilages; together with the contraction of the diaphragm drawing with it the rapidly distending bases, tend to show in inspiration the increasing movement of the thoracic wall from above downwards, and consequently the proportionately greater force with which the inspired air enters the bases as compared to the apices. In expiration we have the elastic recoil of the lungs, strongest in those parts which have been the most expanded; the recoil of the elastic cartilages and sternum returning to their original position, with the driving upwards of the thoracic floor by the retraction of the abdominal walls, previously distended; these in turn tend to show the greater force with which the air is expelled from the bases as compared to the apices. If we go a step further we can apply the same rule to a subdivision of the apex or of the base, whereby we are able to conclude that some part or parts of the apex, or of the base, are more or less influenced by the respiratory forces according to position; so that we are able to assume that the lessened movement of the apex is not uniform through the whole apex.

I think it probable that the bacillus, which is of slow growth, finds its way into that portion of the apex which is the least disturbed by the air currents; there, if the soil be favorable, in one or more bronchioles develops the primary lesion. I believe this focus to be within one inch to one inch and a half from the

summit of the apex, and nearer the posterior surface; which would correspond to the usual site of the primary lesion in the lungs. Why, it might be asked, does not the disease begin at the extreme apex? For the same reason that it does not generally begin at the surface of the apex anteriorly, laterally or posteriorly; because the immediate effects of inspiration and expiration are more marked at the surface of the apex than centrally. So that this upper stratum, if I may so call it, is less pervious to the bacillus.

The secondary lesion, as I mentioned in the first part of this paper, appeared at a point about "one and a half inches below the upper and posterior extremity of the lower lobe, and about the same distance from its posterior border." This focus is on a lower plane than that at the apex of the upper lobe, but it is still high up in the thoracic cavity, and is therefore subject somewhat to the same influences which I mentioned above. Why the disease does not affect the apex of the other lung before this lower lobe seems to me sufficiently clear, from the fact that this lower apex is more exposed from the disease already existing in the upper lobe of that side. For the same reasons the same foci in the apices of the lobes of the lung previously free become involved by means of the air current. The nodules which appear, with healthy lung tissue intervening, are no doubt produced by the virus being carried from the original focus into other bronchioles and setting up the disease anew.

The respiratory theory is also in conformity with the development of tubercle in unusual positions. In basic phthisis the normal action of that portion of the lung has been interfered with, whereby it responds feebly to the respiratory effort and so becomes the point the most vulnerable. Nor is the plausibility of this theory weakened by the fact that in women the upper part of the chest is subject somewhat to greater movement in respiration than in men, and that they are not apparently less prone to the disease. The foci of least resistance remain the same. Among the many influences which are at work to bring about the constitutional change favorable to the growth of the bacillus, notwithstanding the apparent advantage in women of

slightly increased action at the apices, these influences must be considerably favored by their indoor life and want of suitable exercise.

In concluding these remarks, I sincerely hope that the efforts of the profession will succeed in raising up a barrier against the inroads of this disease, and that a therapeutic agent will be found to stem the advance of a virus which has proved the bane of the human race.

A CASE OF LABOR COMPLICATED WITH UTERINE FIBRO-MYOMA.*

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Uterine myomata are common enough in the non-pregnant, and the attention of gynæcologists has been prominently directed to the symptoms, diagnosis and treatment of these tumors by the Apostoli-Tait controversy. Obstetricians do not so frequently meet with such tumors, and it is quite rare for labor to be seriously impeded or obstructed by a uterine myoma.

In pregnancy the injurious influence of a myoma depends mainly upon its size and situation. If subperitoneal, small, and located near the fundus, it does not usually affect the course of gestation and labor to any appreciable extent. It grows as the uterus grows, and involutes as it involutes. If it is interstitial and located in the fundus or body, it is apt to cause abortion or predispose to hemorrhage and rupture of the uterine wall. If it is cervical, there is usually more danger. In about half of the cases cervical myomata are pedunculated, and may be either removed or pushed out of the way during labor ; but when they are interstitial and of large size, they not only offer a mechanical impediment to the advance of the child, but are themselves so much injured and compressed that they are apt to slough or break down after labor, thereby subjecting the mother to the risks of septic absorption.

The case I submit to you this evening is one of interstitial fibro myoma of the cervix, seriously delaying and impeding

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labor, destroying the life of the child and eventually that of the mother. There are several interesting points in the matter of diagnosis and treatment to which I would like to invite your attention.

Mrs. C., æt. 28, I-para, was admitted to the Montreal Maternity 19th April, 1890, in active labor, on the recommendation of Dr. Molson, under whose care she had been Family and personal history good. Menstruation established at the age of 13, regular, painless, and not too free. Last menstrual period concluded on 20th August, 1889. With the exception of slight morning sickness she enjoyed good health till the latter part of January, when she began to feel generally out of sorts, but had no local symptoms. In February she went to Ottawa by rail, and complained a good deal of the jolting of the cars. Some general abdominal pain was felt, which continued after her return to Montreal. She began to be restless and uneasy at night, and often used to get up and walk about the house in order to obtain relief. One morning after a particularly restless night she felt severe pain in the right iliac region, and noticed there, for the first time, a small swelling which was tender to touch. Pain, tenderness and swelling continued in that region thenceforward till the onset of labor. About the end of March she began to suffer from occasional attacks of vomiting and from a short hacking cough, which was very annoying and disturbed her sleep. She felt the child's movements distinctly. About 15th April the abdominal pain became so severe and persistent that she could not sleep. On the 18th, about 6 P.M., the pains became agonizing and almost continuous. On the 19th, about 6 A.M., a quantity of liquor amnii came away, the pain meanwhile growing steadily worse. At 11 A.M. she entered the Maternity. For four nights she had scarcely closed her eyes, and for at least seventeen hours the uterus had been in a state of constant contraction; she was very weak and exhausted. Upon examination the abdominal tumor was found to be prominent and somewhat irregular in outline, in a state of tonic contraction, and very sensitive to touch. Under such circumstances palpation was inexpedient and useless. Fœtal heart sounds could not be heard.

By vaginal examination no presenting part could be made out; the undilated os was high up, almost out of reach; there was no pelvic contraction. The bladder and rectum having been emptied a draught of Liq. Op. Sed. ℥ xxv was given. During the afternoon she dozed frequently and retained a moderate quantity of milk and beef-tea. By the evening the os could be reached somewhat more easily and admitted the tip of one finger, but it was still too high for any presenting part to be made out. A draught of Liq. Op. Sed. ℥ xv was given every four hours during the night; she rested fairly well and retained a good deal of nourishment. On the 20th, at 10 A.M., the os was a little more dilated, but still high up; a presenting part could be felt but not diagnosed. The uterus was less rigidly contracted, and by external palpation the fœtal outline could be indistinctly made out high up on the left side. On the right side, below the level of the umbilicus, indistinct fluctuation was found. A slight sulcus or depression seemed to run obliquely across the anterior surface of the uterus from the right border about the level of the umbilicus to the middle of the symphysis. To the right of this shallow sulcus fluctuation could be felt; but to the left, none. The uterine muscle was still in a state of tonic contraction, making palpation difficult and unsatisfactory. The opium was continued throughout the day and nourishment administered as freely as possible. At 4 P.M. the condition of things was practically unchanged. At 8.15 P.M. the pains suddenly became much more severe, the os quickly dilated, the head, very much flattened and compressed, came rapidly down, and a dead child was born spontaneously at 8.50 P.M., 251 days from the cessation of menstruation, 50 hours from the beginning of violent labor pains. The child was well nourished and weighed six pounds. The cranial bones were very movable and overlapped considerably; a long wedge-shaped caput occupied the vertex in the middle line between the anterior aad posterior fontanelles. Notwithstanding the birth of the child, the abdominal tumor did not seem to decrease very much; but the oblique sulcus on the right became more marked and fluctuation more evident. On internal examination the cervix was found to be still very high up; and

on passing two fingers into the cervix, a fluctuating mass was felt extending almost as low as the external os and bulging from the right side. The left side of the cervix seemed normal. Distinct fluctuation could be made out between the fingers inside the cervix and the external band at the level of the umbilicus on the right. By careful palpation the tumor was found to occupy the whole of the right iliac fossa and more than half the brim of the pelvis. It extended as high as the umbilicus and as far as the middle line to the left, pushing the uterus upwards and to the left. The placenta, which was attached to the fundus, was expelled by the Credé method without difficulty. A hot intra-uterine douche was given and then the well-contracted fundus could be felt on the left a little above the upper border of the tumor, from which it was separated by a deep sulcus. There was no hemorrhage and the patient passed a comfortable night, taking nourishment freely at intervals. On the 21st, at 8 A.M. (temp. 100°, pulse 120), she complained a good deal of flatus and short hacking cough. A turpentine enema gave some relief; but during the day the flatus increased, the cough became more distressing, and epigastric pain and vomiting set in. At 1 P.M., temperature 101°, pulse 160. At 4 P.M., Dr. Gardner saw her with me in consultation. With rising pulse and temperature, increasing flatus and tympanites, vomiting, hacking cough and profuse perspiration, she was apparently sinking from septic trouble, and we decided that her only chance lay in immediate abdominal section. Accordingly, at 7.15 P.M., Dr. Gardner operated, with the assistance of Dr. Alloway and myself. The operation was tedious and difficult, and when concluded, at 8.45 P.M., the patient was very weak. She rallied, however, for a time, but at 1 A.M. suddenly sank and died. Unfortunately a post-mortem examination could not be obtained.

There are several points of interest from an obstetrical point of view to which I would like to draw your attention.

1. *The rapid growth of the tumor.* The patient's health was good till the end of January; then she began to feel generally out of sorts, and towards the end of February, after a railway journey which distressed her very much, she first noticed a

swelling in the right iliac region, painful and tender to the touch. In seven weeks it had grown so as to block the right side of the pelvis, fill up the right iliac fossa, and extend on the right side of the abdomen as high as the umbilicus.

2. *Rapid degeneration.* The tumor, which was no doubt originally solid, must have undergone rapid degeneration; a considerable quantity of fluid formed and bulged into the cervix, so that fluctuation could be distinctly made out by combined as well as by external palpation. The pathologist reports that there was no evidence of necrosis or inflammatory action in the substance of the tumor. It is therefore a very interesting question whether the general malaise, hacking cough, vomiting and sleeplessness of the last week or two were in any way attributable to systemic poisoning by the absorption of some of these products of degeneration. Just before the operation the patient presented clinically the symptoms of rapid prostration from septicæmia; yet from the pathological report we find that there were no signs of septic change in either uterus or tumor. If the group o symptoms so strongly presumptive of septic infection before and after labor was really due to sepsis, whence came the sepsis? Can a degenerating myoma showing no signs of necrotic or inflammatory action produce septicæmia?

3. *Influence of the tumor on pregnancy and labor.* The development of the fœtus was not affected; it was large and well nourished. The presence of a rapidly-growing tumor probably excited uterine action and arrested the progress of gestation by inducing premature labor. It also made the pains more violent and the tetanic uterine contraction soon asphyxiated the fœtus. As long as the os remained undilated, the myoma (involving the right half of the cervix) lay over the right half of the brim and afforded a mechanical impediment to the descent of the child. It also pushed the uterus upwards and to the left, and kept the os high up out of reach. When the opium somewhat relaxed tonic uterine contraction, the lower uterine segment and cervix were slowly taken up into the uterine cavity, till finally the os opened out and the cervix was pulled up over the presenting part. The tumor was dragged up along with the cervix

and thereby displaced sufficiently from the brim to allow the flattened wedge-shaped head to slip past it into the pelvis ; labor then terminated in a few minutes. There was no hemorrhage either before, during, or after labor, which points to the cervical origin of the tumor ; in fact the presence of the tumor stimulated the uterus to continuous vigorous contraction after the expulsion of the placenta.

4. *Diagnosis.* A positive diagnosis was impossible. When the patient entered the Maternity the liquor amnii had been away for some hours, the uterus was in a state of tonic contraction, moulded about the contour of the child, sensitive to touch, and excited to still stronger contraction by any attempts at external palpation. Very little information was available, therefore, externally. The patient was a primipara, the vagina narrow and dry, the os undilated and almost out of reach, so that very little information could be got by vaginal examination. As the violent uterine action yielded to opium, fluctuation could be made out on the right side, quite separate from the main portion of the uterus, in which the outline of the fœtus could be indistinctly felt. This suggested the possibility of twin pregnancy with two distinct amniotic sacs, the left and upper sac ruptured and empty, the lower unruptured, filling up the brim and preventing the descent of the first fœtus. Fœtal heart sounds could not be heard, and no help obtained from that source. Pregnancy in the horn of a uterus bicornis or a double uterus would not explain the absence of any presenting part at the brim. The tumor was too low for an ovarian tumor, too immovable for a pedunculated myoma, too soft and fluctuating for a solid fibro-myoma.

5. *Treatment.* When the patient entered the Maternity weak from want of food, exhausted from loss of sleep and continuous violent uterine action for seventeen hours, with liquor amnii away, the os undilated and out of reach, and the uterus in a state of tonic contraction, the case seemed very grave. As might have been expected, the fœtal heart sounds were not to be heard ; such violent uninterrupted uterine action would soon asphyxiate the fœtus. The fœtus being in all probability dead, the mother's interests only had to be considered in deciding upon

a line of treatment. Any attempt to deliver artificially by forceps or version, or to reduce the child's bulk by embryotomy, was clearly out of the question, the os being undilated and out of reach. The choice lay between Cæsarian section, and an expectant treatment with full doses of opium and liberal feeding. The mortality of section in cases of myoma is very great, and, moreover, in the present instance, the child was probably dead and the mother was very much exhausted. It seemed wiser, therefore, to try opium, rest and feeding, at any rate until the patient's condition was somewhat better. And it is worthy of notice how admirably the opium acted. The patient soon became fairly comfortable, the tonic uterine action moderated, cough and vomiting ceased, sleep was obtained, and a large quantity of nourishment taken and retained. Labor progressed slowly, and finally terminated spontaneously and safely. No operative measures would have produced such satisfactory results. Though subsequent events proved that the child was already dead and that the mother's life could not have been saved, yet, nevertheless, it is a satisfaction to know that the expectant plan was the right one, that it succeeded as far as was possible, and that the mother's chances were not impaired by any undue or untimely operative interference. Had the case been under observation in hospital before labor began, Cæsarian section would have probably saved the child and perhaps even the mother; but as it was, the time for operating had long since passed before she entered the Maternity. In view of a case such as this, where at least one life (perhaps two) might have been saved, let me again emphasize the advisability—nay, rather the necessity—of making a careful external examination of all cases about the seventh or eighth month of pregnancy. Thereby much valuable information may be gained, and if operative measures, such as Cæsarian section, seem likely to be indicated, sufficient time is given to arrange for such place, time and conditions as will afford the operation the greatest chance of success.

Dr. Johnston's pathological report.—The amputated fundus of the uterus, together with the uterine appendages and a large fragment of the tumor, received about twenty hours after the

operation. They were in good condition, and were bathed in the thin fluid which was found within the tumor. The uterus, as far as can be judged from the upper six inches sent, presents the usual appearances of the organ shortly after delivery. The wall is about one and a half inches thick; its vessels contain but little blood. The endometrium is loosely attached and yellow; under the microscope it shows marked fatty change. No endometritis of any description. The placental site (posterior) looks normal. The external surface of the uterus shows traces of old adhesions which have been torn through. No signs of recent inflammation, the peritoneum being smooth, glistening and pale. Some traces of old adhesions about the appendages, but the tubes are not obstructed and are free from any suppurative condition. The part of the tumor which was sent is an uneven, irregular mass as big as both fists. It consists of a firm elastic tissue, arranged in nodular masses, bound together by trabeculæ and riddled with spaces or cavities of varying sizes and shapes. These cavities communicate freely with one another and with the surface of the specimen. A few are still closed, and when incised are seen to be filled with a thin, pale, opaque fluid, which has a slippery feel like synovia, and is not at all sticky. The fluid was not examined microscopically, but gave the impression of being chiefly serous in nature, and its opacity seemed due to detritus and fatty matter in suspension, not sinking to the bottom like cellular elements do. The walls of these spaces are smooth, glistening and slippery. They do not show any traces of present breaking down or necrosis, nor do they show traces of productive inflammation, but appear merely to be formed by a slow process of degeneration of the solid parts of the tumor with dilatation of the lymph spaces. Microscopic examination confirms this view, as the lining membrane is seen to consist of a thin zone of flattened cells, no granulations being seen. Microscopically the tumor is a myoma.

SOME RARE FORMS OF TUMORS OF THE BREAST.

By Francis J. Shepherd, M.D.,
Surgeon to the Montreal General Hospital.

The following interesting examples of some rather rare forms of tumors of the breast which I have operated on during the past year appear to me to be of sufficient interest to place on record:—

Case I—*Galactocele of the Left Breast.*

Mrs. S., of Nipissing, Ont., aged 24, consulted me on March 3rd, 1890, for a small tumor of the left breast. Has been married some five years, and has had two children. With her first child she had no trouble with her breasts, but after her second confinement, some fourteen months ago, both breasts were severely inflamed ("caked"). The swelling in the right breast soon disappeared, but the left breast never resumed its usual condition; there remained behind a distinct tumor above and external to the nipple. She first noticed the tumor twelve months ago (two months after her confinement), and since then it has not increased much in size. On examining the left breast a tumor the size of a small orange was felt above and to the left of the nipple; this was freely movable under the skin, and had a soft, doughy feel. No discoloration of the skin. An aspirating needle gave a negative result. Removal was advised, and on March 6th, 1890, the skin over the tumor was incised and the cyst wall soon came into view; this was easily dissected away from the surrounding glandular tissue. The wound healed completely in a week. On opening the cyst, which was surrounded by a very thick wall, it was found to contain a putty-like substance such as one often sees in dermoid cysts.

This form of breast tumor is somewhat rare, and is always developed during the active state of the organ. It is due to the rupture or dilatation of a milk duct. At first I looked upon this case as one of dermoid cyst, but on submitting the specimen to Dr. Wyatt Johnston, he pronounced it a galactocele, the contents being made up solely of fatty materials. In these cases

the serous portions of the milk are absorbed slowly and the fatty matter left. The contents of a galactocele are usually more fluid than in the case above recorded.

CASE II—*Multiple Cystoma of Both Breasts.*

Mrs. H., of Quebec, aged 40, a thin, spare woman, mother of one child aged 12, consulted me on June 7th, 1886, for a small tumor of the right breast. She had much trouble with this breast when nursing, but had not noticed this growth until a few days before. On examination, found above and close to the nipple a distinct tumor of the right breast, about the size of a walnut, freely movable, hard, and non-fluctuating. There was no retraction of the nipple and no discoloration of the skin. I regarded it as a fibroma and recommended removal. The operation was performed on June 8th, 1886. On cutting over the tumor and attempting to dissect it out I accidentally cut into it, when it immediately collapsed, emptying itself of a straw-colored fluid. On examining the breast further I found that numerous other small cysts existed, so it was decided to remove the breast, which was accordingly done. On cutting into the breast after removal it was seen to be studded with cysts from the size of a split pea to that of a bean, and containing a clear semi-gelatinous fluid. She made a good recovery, and I did not see her again until February of the present year, when she consulted me about a similar tumor of the left breast, immediately inside the nipple. As this had the same characteristics as the previous one, I diagnosed a cyst and advised removal. The breast was removed, and, as I had supposed, the tumor was cystic. This breast also was studded with innumerable small cysts. The patient recovered rapidly with two dressings and without any elevation of temperature.

In this case the tension of the cyst was so great that no fluctuation could be made out (although the case was carefully examined), and the hardness and mobility of the tumor gave it the exact feel of a fibroid. These cysts, as a rule, appear quite suddenly and grow rapidly. I have at present a similar case under observation in a young woman, where there are two cysts

for any length of time in one position. Three or four weeks later it became swollen and painful, and he had to remain in bed for seven weeks. For three years after this he was fairly well, going about his work, the joint being somewhat stiff. The knee now again became very painful and swollen, and a large abscess formed in the popliteal space. This was lanced several times; the last time a large quantity of pus and broken down tissue escaped. From this time the knee remained quite stiff and semi-flexed. In 1888 he entered the hospital and had his leg put up in plaster-of-Paris, which gave him ease for several months; but another collection formed in the popliteal space, which has left a sinus communicating with the joint. He has had constant pain in the knee, more severe at times, especially at night. His father, mother, two brothers and two sisters are living and well. Eight brothers and sisters died in childhood. There is no history of tuberculosis in the family. He has been losing weight for the last year, and is somewhat emaciated.

Present condition.—There is diminished expansion in the left apex, where the breathing is harsh and of a blowing character. The right knee is flexed at an angle of about 140° and ankylosed. The depressions on each side of the patella are obliterated, and the patella is fixed and displaced outwards. The right knee measures two inches more in circumference than its fellow; the right leg and thigh are very much smaller than the left, measuring two and two and a half inches less respectively. In the popliteal space are two sinuses and another on the outer side of the joint, through which a probe can be introduced upwards to the distance of four inches. The patient requested that his leg be amputated. He positively declined excision, stating that a stiff leg would be useless and in his way when working.

June 24th.—Patient was etherized, an Esmarch bandage applied, and the thigh amputated immediately above the knee, by a long anterior skin flap reaching below the knee and a short posterior one, including the muscles (Carden's amputation). Two rubber drainage-tubes were used, and the wound was closed with silkworm gut sutures and dressed with washed gauze and a jute pad.

As is Dr. Shepherd's custom, the dressings were changed at the end of twenty-four hours, the tubes removed, and the dressings reapplied. At the end of a week the man was allowed up in a chair, and at the end of two weeks the wound was dressed for the second and last time and the silkworm gut sutures removed. The wound was found to be completely healed. After this the patient was allowed up on crutches, and was discharged from the hospital on the eighteenth day (July 12th).

The knee-joint contained a large quantity of inflammatory tissue, and the outer condyle, with the corresponding part of the head of the tibia especially, were extensively necrosed and diseased.

Partial Excision of the Lower Jaw for Recurrent Epithelioma.

S. S., of Plantagenet, Ont., a hotel-keeper, aged 46 years, was admitted to the hospital on May 30th, 1890, with a large, firm tumor on the right side of the lower jaw.

History.—In 1886 a small fissure appeared on the right side of the lower lip. This would heal up and appear again, and continued in this way for about fifteen months, when the edges became indurated. He then had it burnt with caustic, and was advised by a doctor to have it excised. He objected to this, and was treated by a cancer quack with plasters, which removed a piece of his lip. The sore healed and he was apparently well for five or six months, or until the autumn of 1888, when a small, firm nodule about the size of a pea appeared just beneath the right side of the chin. This kept on growing gradually until last January ; since then it has been growing rapidly, and on admission it was found extending from about one inch to the right of the symphysis almost to the angle of the lower jaw. It was firmly attached to the jaw, and the skin over it was freely movable and looked quite normal. It had been painful during the last four months, at times feeling as though the jaw was being burned with a hot wire. There was no glandular enlargement. The patient did not smoke, and there was no history of injury. He is a fairly well-nourished man, of average intelligence, but of intemperate habits. He suffered from a short, dry cough.

No physical signs of disease in the lungs. The other functions are all properly performed. There is no family history of cancer.

Operation.—On May 31st, after being shaved, he was etherized and the parts thoroughly washed. An incision was made down the median line of the chin and carried about an inch beyond; this was joined by another running along the lower border of the jaw to the angle, and the flap dissected over the growth. The jaw was sawn through a little to the right of the symphysis and again near the angle of the jaw, and removed, some of the teeth having first been extracted. The wound was painted with iodoform paint, and the cut edges of the mucous membrane brought together with a continuous suture of fine catgut. The edges of the skin-wound were sutured with silkworm gut. A couple of rubber drains were used. It was then painted with iodoform paint and dressed with washed gauze.

For the first three days after the operation he complained of some pain and soreness about the wound, and suffered very much from a cough and expectoration of viscid mucus. During this time he was fed with enemata of beef-tea and brandy, and for several days after, through a soft tube introduced into the œsophagus. On the second day the dressings and silkworm gut sutures were removed. The patient frequently washed out his mouth with a weak solution of Condy's fluid, and the wound was irrigated with a solution of boracic acid daily. The drainage tubes were removed on the seventh day. The temperature after the fourth day never went above normal; before that the evening temperatures were 100°. The patient left hospital on the 14th of June with the wound perfectly healed and able to take nourishment freely in the usual way. Dr. Wyatt Johnston examined the growth and pronounced it to be an epithelioma.

Remarks.—In this case, as the bone was not extensively diseased, the ramus of the jaw was left. In removing half the lower jaw, it is very important to saw through the jaw a little to one side of the symphysis, in order to preserve the attachment of the genio-hyoglossus muscles. Suturing the cut mucous membrane has the great advantage of separating the cavity of the mouth from the wound, and so lessening the chance of septic infection.

Excision of the Knee-joint for Tuberculous Disease.

C. McD., of Alexandria, Ont., aged 20, a well-nourished but anæmic girl, was admitted to the hospital on April 3rd, 1890, with a stiff and painful knee-joint. She had always enjoyed good health, and all the family were healthy excepting one sister, who was tuberculous.

History.—The present disease began two years ago as the result of a fall which injured the left knee, but it did not prevent her from going about. In April, 1889, she again fell on the same knee, after which it became very much swollen, painful, and has remained stiff and slightly flexed since. She came to the hospital, under Dr. Shepherd, in July, 1889, and had her leg put up in plaster-of-Paris in an extended position. She then went home, and returned on Sept. 30th and had the plaster removed, when the knee was found in much the same condition, and it was again put up in plaster. Excision was recommended, but declined. She consulted various doctors and was submitted to many treatments without benefit, so returned to the hospital, willing to agree to any treatment recommended.

Condition on admission.—The leg was semi-flexed on the thigh; the depressions on each side of the patella, which was fixed, were obliterated, but there was no fluctuation, and movements of the joint were limited. The leg could be slightly flexed, but could not be extended. Patient could not bear any weight on that leg, and at times the knee was extremely painful. There was partial dislocation of the tibia backwards. The knee-joint over the patella measured one and a half inches more in circumference than its fellow, and the leg and thigh were wasted, measuring one and two and a half inches less respectively. The temperature was normal. Her appearance was that of fairly good health.

Operation.—On April 19th she was etherized, the knee and the parts about thoroughly scrubbed with soap and water, and an Esmarch bandage applied above the knee. An incision two inches long was made on the outer side of the joint, with the intention of doing an arthrectomy, but on cutting into the joint

Dr. Shepherd found the disease so far advanced that he decided to excise it. The incision was continued around the knee, curving downwards as far as the tubercle of the tibia, and the flap reflected up. The patella was then dissected away, and the synovial membrane was found very much thickened. The cartilages had almost entirely disappeared from the outer condyle of the femur, and on the upper surface of the inner tuberosity of the tibia was a large piece of necrosed bone. A small quantity of pus was present in the joint. All the diseased tissue was dissected away and a thin portion of the articular surfaces of the tibia and femur sawn off, leaving a concave surface on the former and a convex on the latter, after the method practised by Dr. Fenwick of Montreal. The Esmarch was then removed, the vessels secured, and the bones brought together and secured with a couple of Macewen's steel pins. An opening was made on each side for a couple of rubber drainage-tubes. The edges of the flaps were brought together with silkworm gut sutures and then dressed with iodoform, washed gauze, absorbent cotton and put up in a Macewen's splint. There being but little oozing, and a perfectly normal temperature, the dressings were not disturbed until May 8th. The wound was found to be completely healed except at the site of the drainage-tubes. The sutures, tubes and steel pins were removed and the dressings reapplied. The second dressing was done on May 22nd, when, wishing to go home, the bony union being firm and strong, the leg was put up in plaster-of-Paris. She went about a few days in a chair, and left for home on May 24th, with instructions to return in a month.

She returned on July 1st and had the plaster removed. While at home she was going about on crutches. The wound was all healed up, and there was no tenderness at all about the leg, which was perfectly straight. There was only half an inch shortening in the limb, and she was able to bear her weight and walk without its causing any pain.

Remarks.—This is a very good example of the excellent results obtained by an excision of the knee in a favorable case. It was intended at first to do an "erasion" operation, but owing to

the advanced condition of the disease and the involvement of osseous structures, it was decided to at once proceed to excision. In cases of knee-joint disease, the extent, symptoms and appearances are often deceptive, and do not give a correct idea of the amount of disease. On opening the joint the disease is usually found to be greater than anticipated—that is, in those cases where there has been no suppuration. The Macewen splint is very satisfactory, and, in combination with the steel pins which fix the bones together, dressings can be done with but little pain, the leg being easily lifted from the splint and the dressings changed without disturbing the position of the bones and with but little pain to the patient.

Reviews and Notices of Books.

A Handbook of Diseases of the Nose and Naso-Pharynx. By James B. Ball, M.D. (Lond.), M.R.C.P., Physician to the Department for Diseases of the Throat and Nose, and Senior Assistant Physician, West London Hospital. London: H. K. Lewis, 136 Gower street, W.C.

The aim of the present work is to give within moderate compass such a description of the nose and naso-pharynx as will be useful to the senior student and practitioner. Controversial points and theoretical discussions have been omitted, while diseases of uncommon occurrence are but briefly mentioned. The author devotes the first two chapters to the applied anatomy and physiology of the nose, and the third and fourth to the subjects of diagnosis and treatment considered in a general way. Then follows an account of the diseases of the nose as ordinarily met with. The descriptions are clear and the treatment recommended plain and practical. The book is, in fact, not written for specialists, but for general practitioners, and in this particular the author has been remarkably successful. We recommend it specially to those who, by the necessities of practice, are obliged to undertake the care of nose cases which they would much prefer passing on to a specialist. Such readers will derive instruction and comfort from Dr. Ball's work. A most useful formulary forms part of the volume.

Society Proceedings.

MEDICO-CHIRURGICAL SOCIETY OF MONTREAL.

Stated Meeting, 2nd May, 1890.

G. E. Armstrong, M.D., President, in the Chair.

Laparotomy.—Dr. L. Smith read a paper on five cases of laparotomy.

Discussion.—Dr. Trenholme said he believed the true success of these cases lay in the use of antiseptic measures. He believed in abdominal section for pelvic abscess in all cases, whether complicated or not.

Dr. Bell said that the pain after such operations varies with the complications present. His experience was that these patients suffered little pain after such operation.

Dr. Armstrong remarked that he had lately had two cases of pelvic abscess communicating with the bowel. In the one case he attempted drainage and careful washing out of the abscess cavity, but with an unhappy result. In the second case he proposed doing abdominal section, to which the patient would not consent; therefore he had to pursue the method of treatment adopted in the former case. His patients, after laparotomy, had not experienced much pain.

Dr. Hutchison then related the following cases which had occurred in his practice :—

Rheumatism.—J. McD., aged 15 years, was seen on the 16th March, 1890. Family history good. Looks healthy, with rather a heavy, dull face. Had been suffering for a few days prior to my visit from pains in the larger joints, lassitude, and restlessness. On examination, temperature 102½°, pulse 110, and respirations slightly quickened; both ankles hot, swollen and painful; fair amount of perspiration. Was put on soda salicylate five grains every four hours. Next day (17th) the temperature was 102°; general symptoms improving. On the 18th, temperature 100°; improving; suffering no pain; felt comfortable and quiet. At 9 p.m. I was called suddenly; found patient in violent spasms, head thrown back, back arched, and

body resting on heels and back of head. Patient apparently completely unconscious. Pupils markedly dilated, responding very little and very slowly to light. The muscles of the arms were so flexed that the pulse could not be counted, but the heart beat at 120 to the minute. Temperature 100°. Each time the spasm came on it was accompanied by a peculiar loud cry, so loud that the house was surrounded by anxious neighbors. There was some vomiting between the spasms. When I arrived, no cause could be assigned by the family for this condition, which had developed half an hour before my arrival. I had made up my mind that it was strychnine poisoning and had despatched my cab for a medical friend to divide the responsibility when I heard a loud laugh from the patient resembling that of hysteria. I immediately applied cold flagellations, which quickly stopped the cries and spasms; they never returned, but patient was still unconscious, in which condition he was on Dr. E.'s arrival. After watching him for half an hour we returned home. On the following morning I found he had wakened up at 4 A.M. feeling sore and tired and without any knowledge of what had occurred. Temperature normal. I kept him in bed for the following week, and he has had no return of the symptoms.

Pneumonia with subsequent delirium.—A. C., aged 33 years, good family history, no insanity. Always been healthy; never suffered from any serious illness. I saw this patient on March 13th, 1890; he had taken a chill the day before while at work, returned home, and went to bed at once. Physical examination showed pneumonia of the right base; temperature 104°. This condition continued much the same for the next three days, when he was attacked with more severe continuous pain on right side. On examination, a loud friction murmur was heard. On the seventh or eighth day the temperature fell to normal, resolution was going on, and percussion note was slightly dull. About this time I noticed that the patient, although knowing the attendants and myself, was acting under a delusion, in fact talking about things altogether foreign to his sickness and employment, and was prepared to argue the point. The attendants had told me

that for two or three days he had been acting strangely, but thinking it was the ordinary delirium of exhaustion, took no notice of it. This delirium lasted about two weeks, during which time temperature, pulse and respirations were normal, condition of lung improving, and cough somewhat troublesome. I thought of typhoid fever, but could find no evidence of it, except a slight bleeding of the nose during the third week of the illness. A few days after this complete consciousness returned and the patient was convalescent.

My object in bringing this case before the Society was to try and decide the cause of the delirium; it was totally unlike the cases of nervous exhaustion I had seen, and reminded me somewhat of the case of Dr. Campbell's some time ago which ultimately turned out to be miliary tuberculosis of the brain.

Foreign Body in the Larynx.—S. H., aged 13 months; on the 27th March, 1890, was given by a small brother a portion of boiled egg which contained some egg shell; child immediately commenced to cough and choke; coughed up a little blood and mucus, but no shell. I saw the child an hour afterward. He looked perfectly well, and continued so till the third day, when gradual laryngeal obstruction was noticed, accompanied by moderate degree of pyrexia; the obstruction increased to such a degree on the fourth day that I asked my friend Dr. Armstrong to see the case with me late at night to consider the advisability of intubation or tracheotomy. It was decided to delay a few hours, during which time the general condition improved and the necessity for operation disappeared. On the eighth day the child seemed perfectly well, with the exception of loss of voice; slept and took food well, and just an occasional cough: normal temperature. On the thirteenth day the child suddenly choked, coughed a great deal, and brought up a comparatively large piece of egg shell, with some blood. Voice immediately returned and the child has since had no further trouble.

The peculiar points were: (1) The absence of the ordinary symptoms of a foreign body in the throat; (2) the laryngitis was apparently due to a foreign body which had done damage and disappeared; (3) that so large a foreign body as

the specimen exhibited could remain so long in so small a throat without causing continued symptoms of obstruction. I may say that the throat was illuminated and a careful examination made by Dr. A. and myself, but nothing could be found or seen in the upper part of the throat.

Discussion.—Dr. Geo. Ross remarked that of the first case there could be no two opinions. The symptoms which had so suddenly developed were undoubtedly of an hysterical nature. He had never met with hysteria arising during the course of a constitutional disease, and opisthotonos as a symptom of hysteria in the male is very rare. Delirium in pneumonia is common, but delusional disturbances of mind in the course of convalescence are unusual and hard to explain. Such cases are apt to be met with in those where there is prolonged nervous exhaustion.

Dr. Jas. Stewart said that the mental disturbance in pneumonia resembles puerperal mania and not delirium.

Dr. Smith remarked that he had met with delirium after the administration of salicylic acid.

Dr. Geo. Ross said that distinct delusions, even of a dangerous character, arose when this drug was first brought into use, and it was due, doubtless, to the impurities contained in the drug.

Injury following Delivery by Forceps.—Dr. Springle exhibited a photograph of a baby recently delivered by forceps, from which there resulted a paralysis of the left side of the face and left side of the tongue. Two days later a serous discharge was noticed coming from the left ear, and the supposition was, considering all the symptoms present, that the child had suffered from a fracture of the base of the skull due to the application of the forceps during delivery.

Vesical Calculus.—Dr. Gurd exhibited this specimen which had been passed per urethram. In size it was equal to that of a small bean.

Stated Meeting, 16th May, 1890.

G. E. Armstrong, M.D., President, in the Chair.

Subsequent history of a case of Nephrectomy.—Dr. Shepherd reported the death of a woman from whom he had removed the left kidney in September, 1885, for calculous pyelitis (*vide New York Med. Journal*, 23rd April, 1887, for full report of case and operation). After the operation the remaining kidney had done good work, the amount of urine excreted daily being between forty-four and fifty ounces. Two years after the operation the patient had complained of pains in the region of the right kidney, and pus in small quantities had appeared in the urine. At that time he had suggested exploring the right kidney, as he felt sure there was a calculus, but the patient would have nothing done. A year ago she appeared at the hospital and was admitted. She was at that time passing large quantities of pus in the urine, but she was in good condition and refused any operation. With rest in bed the pus had almost disappeared. She was not seen until a few weeks ago, when her husband had brought her to the hospital in a very weak and feeble condition; she had been confined some ten days previous. At this time she was only passing from four to ten ounces of urine daily. She had died after being two days in the hospital. At the autopsy the right kidney was found much enlarged and greatly disorganized by a large pus cavity which contained a small stone; the left ureter was obliterated and appeared as a round cord. No doubt this patient's life might have been further extended had she submitted to a second operation two years ago. She had given birth to three children after the removal of the left kidney.

Foreign Body retained in the Nose for Twenty-five Years.—Dr. Major reported the case of an English-woman, recently arrived in Canada, who had applied at his clinic for diseases of the nose and throat at the Montreal General Hospital for relief from nasal obstruction. The patient had attributed the difficulty she experienced in breathing to a catarrhal condition, the result of climatic causes. On examination, the right nostril was seen

to be occluded by swelling of the turbinated tissue, but when a probe was passed for exploratory purposes a foreign body of large proportions was encountered. Cocaine was applied, and, after some difficulty, a rhinolith was dislodged, which was drawn through the nostril after some trouble. The body had measured 19 by 13 by 9 millimetres, and weighed 2½ grammes. The patient, who gave her age as 31 years, stated that when six years old she had introduced a number of small sea-shells into the nostril. She had always believed that they had all been removed. She thought it quite likely that a shell would be found to be the nucleus of the mass. The woman's husband, who accompanied her, said he remembered perfectly the sea-shell episode, and could of his own knowledge confirm his wife's statement. The rhinolith, intact, was produced, and when it was crushed, fragments of a pearly nature were easily distinguished. It was an interesting fact that a foreign body could occupy a nasal chamber for twenty-five years without exciting suspicion and without giving rise to much annoyance. It was also curious that when examining the patient no offensive odor was detected and the lip was not excoriated, as was usual in such cases.

Subchordal Laryngeal Growth Removed by the Endolaryngeal Method.—Dr. Major reported the removal of this growth by Mackenzie's antero-posterior cutting forceps. The patient had given a previous history of subacute laryngitis. The operation had been rendered more difficult than usual by the irritable condition of the throat generally, but more especially from the situation of the tumor, which grew from below the right vocal cord, well forward, in its anterior third. A similar growth was removed from the right anterior faucial pillar in the same man. The microscopical report by Dr. Wyatt Johnston showed the case to be one of simple papilloma. The galvano-cautery was afterward applied to the seat of origin, which was thoroughly destroyed.

Complete Bilateral Abductor Laryngeal Paralysis.—Dr. Major also reported an interesting case of this form of laryngeal paralysis which had followed cerebro-spinal meningitis. The patient, a lad of 17 years, had been under observation for seven

years and had been tracheotomized. Death was the result of displacement of the tube during sleep.

Pigmentation of the Skin in Graves' Disease.—Dr. R. L. MacDonnell exhibited the photograph of a patient whom he had had under his care in the Montreal General Hospital—a girl aged 21, who for several years had suffered from palpitation on exertion. Six months previously to admission thyroid enlargement had been noticed for the first time. Exophthalmos was not prominent. The remarkable feature of the case was the well-defined brown pigmentation on the upper and lower eyelids which had made its appearance during the last six months, and seemed to have no tendency to spread. The natural complexion of the patient was fair, and the pigmented skin had the appearance of a huge freckle. These patches have been noted in cases of exophthalmic goitre, and universal bronzing has been recorded.

Case of Aneurysm of the Aorta.—A paper on this case was read by Dr. Major and Dr. R. L. MacDonnell. The patient, a man of 35, had been admitted into the Montreal General Hospital on the 11th February in a condition of the most urgent dyspnœa, and asphyxia was imminent. Intubation of the larynx practised immediately by Dr. Major gave but partial relief. On the following day the condition of the patient had so far improved that a physical exploration of the chest became practicable. Weak breathing at the left pulmonary base was the only physical sign perceptible. The breathing was loudly stridulous and there was a brassy cough. The patient had suffered from slight attacks of dyspnœa on previous occasions, but had never been subject to cough or pain in the chest. A history of syphilis was probable. He had been employed as a storeman in a warehouse, and had done a great deal of heavy lifting. The dyspnœa returned with great intensity on several occasions during the time that he remained in hospital. Death from sudden syncope occurred on the sixth day. The autopsy revealed the fact that an aneurysm as large as a tennis ball occupied the posterior part of the transverse arch of the aorta, lying behind the left bronchus and compressing it. Rupture had taken place into the posterior mediastinum, which was distended with blood, and there was a rent

in the œsophagus just above the cardiac orifice, through which a quantity of blood had passed, completely filling the stomach and six feet of the small intestines. There was hæmorrhagic infarction of the fibres of the pneumogastric nerve, especially of its recurrent laryngeal branch. There were also multiple cicatrices of both lungs, the remains of spots of embolism, and a recent hæmorrhagic infarction in the left lung.

Dr. MacDonnell made the following remarks upon the clinical features of the case : As soon as there was time to take in fully the clinical bearings of the case, the diagnosis of aneurysm was confidently made. The age, occupation, the condition of the larynx, the cough, the exclusion of air from the left lung, admitted of no other explanation. Two forms of dyspnœa were probably present—one continuous, resulting from the gradually increasing pressure of the tumor upon the trachea and the left lung, the other sudden and paroxysmal, resulting from irritation of the vagus or its branches. That spasm of the larynx was not the only cause of dyspnœa was shown by the fact that the introduction of a tube did not entirely give relief. An aneurysm of slow growth had formed upon the aorta at a point beyond the origin of the great vessels. Therefore the radials were unaffected and the pulses remained of equal size. The tumor presses upon the left bronchus from behind. The fact of this pressure coming from behind and not from above accounts for the absence of tracheal tugging. The general condition up to the time of admission was that commonly seen in patients with small aneurysms of the transverse arch. There was some dyspnœa upon exertion, but there was nothing to interfere with the duties of active life. On the day of admission some violent change occurred in the thorax and urgent laryngeal dyspnœa was set up. The aneurysm ruptured and a sudden gush into the posterior mediastinum takes place, which by pressure on the vagus and its recurrent branch, and by the hemorrhagic infiltration of their fibres, sets up the laryngeal spasm. This condition lasted probably all the time of the patient's residence in hospital, when a second hemorrhage occurred which caused the fatal syncope.

Dr. Major briefly referred to the laryngeal condition and to

a few points of interest in diagnosis. At the laryngoscopic examination shortly after admission to the hospital, he showed abductor paralysis of the left side with intermittent spasmodic movements of the right vocal cord. The larynx was situated deeply in the neck and was stationary; there was no suprasternal depression, and no retraction of the diaphragm. The chest muscles were not actively engaged, but the abdominal walls were undergoing violent contractions, particularly on expiration. The voice and cough were of an asthenic nature. Vagus pressure was diagnosed and subsequently confirmed post-mortem. Tracheotomy was not entertained, as intubation afforded little or no relief, and the other laryngeal signs did not particularly refer to laryngeal obstruction.

Dr. Mills asked if (1) there was evidence *post-mortem* of chronic congestions, (2) a microscopic examination of the vagi nerves and centres had been made with a view of determining the presence or absence of degeneration. With a large aneurysm it was possible to understand that the blood might be very imperfectly circulated, a considerable portion of the elastic force of the aortic arch being lost, hence congestions and, as a consequence, dyspnœa owing to imperfect æration of the blood. Experimental section of the vagi had been shown by several observers to lead to cardiac degeneration. The members of the Association would remember a paper read to them by Dr. Workman and himself about a year ago, in which the investigations of Fantoni and Lustig more especially were reported, with some reflections on the same in the light of his (Dr. Mills) own researches. The influence of the nervous system over nutrition (metabolism) was bound to attract our increasing attention, and must enter more largely, he believed, into the physician's thinkings and practice. What the whole history, from this point of view, of the pressure of an aneurysm might be it was as yet impossible to determine in detail. That it led to both spasm and paralysis of the muscles of the larynx was clear enough. Did it also lead to degeneration of the vagus fibres and their corresponding central cells, with widespread effects on the organs to which the nerve is distributed? This question requires for its solution careful micros-

copic examination. Certainly there are many symptoms in cases of aneurysm that are very obscure at present. In addition to the cardiac effects, it had now been rendered reasonably certain that the pulmonitis following experimental section of both vagi nerves was due to purely trophic effects—*i.e.*, the nutrition becomes disordered, and as he understands inflammation, it is simply deranged nutrition, a remark which perhaps applies to all diseases, though the term metabolism appears more suitable than nutrition. The fact that the adductors and abductors of the larynx become affected and restored in a different order is but another sample of the functional individuality of muscles and nerve fibres, even when the latter run in the same nerve-stem for a greater or smaller portion of their course.

Selections.

LETTERS TO MY HOUSE PHYSICIANS.

By William Osler, M.D.,
Professor of Medicine, Johns Hopkins University, Baltimore.

Letter I.

Freiburg, May 17, 1890.

Dear L.: This is a charming town, beautifully situated at the south-western end of the Black Forest, and with a medical faculty which attracts students from all parts of Germany and not a few from abroad. During the past few years the number of men in attendance has risen rapidly and the semester has reached six hundred. I met here my friend Ramsay Wright, of Toronto University, and together we saw much of interest.

Bäumler, who has charge of the medical clinic, is a man of about 45, and we are very much indebted to him for making our short stay here agreeable and profitable. He was in London at the German Hospital, and subsequently practised there as a consultant for nine years, when he was called to the chair of Medicine. The medical wards, containing about one hundred and twenty beds, are very conveniently arranged, and the plan of having a separate lecture-room for each department, which is almost universal at German universities, is very advantageous.

There are three assistants, the first of whom, Dr. Reinhold, has been here three years, and, as is customary, is appointed for an indefinite term ; the second and third assistants remain for one or two years. In addition, four men are named for periods of three months to act as clinical clerks in the wards.

To-day's routine was as follows: At 7 A.M. the professor gave a didactic lecture (of which five are delivered weekly) to about a dozen students, the small number being due to a holiday yesterday and in part, no doubt, to the fact that attendance upon these systematic lectures is not compulsory. The subject was Diseases of the Œsophagus, and spontaneous rupture, perforation and hemorrhage were discussed in a most exhaustive manner. Afterward, in his private room, Dr. Bäumler raised the question of the value of such teaching to the medical student, and suggested that the same might be got in a shorter time from books. Possibly; and, though I am strongly opposed to our present system of over-lecturing, I could not but feel that the men who had listened and taken notes had got their information in a much more interesting and instructive manner than if they had read the subjects in any text-book. Indeed, I do not know of any one *Practice* which contained all the information given in the three-quarters of an hour. The question must be discussed temperately, as it has two sides, one of which is ably presented in the May number of the *New Review*, in a Lecture against Lecturing, by Professor Sedgwick.

One thing in the lecture-room pleased me greatly : around the walls were inscribed on each side—above the names of Hippocrates, Galen, Vesalius and Harvey, and beneath these in groups —those of the great clinicians of all countries ; and it warmed my heart to see, as the representatives of America, the names of Flint and of dear old Dr. Bowditch. At 8 o'clock the visit to the wards was made and new or specially interesting cases examined. In commenting upon a case of typhlitis, Bäumler spoke of the great frequency of recovery in this disease, which he thought, as is now almost universally accepted, was always at first an affection of the appendix. The tendency toward early operation was, in his opinion, at present too strong. I mentioned

the case which we had in the wards a few months ago, and which was certainly a most encouraging one in support of early interference; but who can say whether the small localized abscess found by Dr. Halsted at the point of the appendix might not have healed, or at any rate subsided, as the inflammation had done in a previous attack? Still, no one will deny that the lad is not better without his rudimentary appendage.

At 9 o'clock the students assembled in the large ward, in the centre of which chairs were arranged on either side of a bed, a method which is followed in the case of fever patients, and other cases too ill to take to the auditorium. A *Practicant*, as a final student is called, was then asked to examine the patient before the class, and an hour was occupied in the thorough investigation of the case—one of typhoid fever. Comments were made on each interesting feature, and the symptoms summed up in a clear and orderly fashion, most instructive to the class, the members of which had an apportunity of afterward looking at the case. Typhoid patients are uniformly bathed whenever the temperature rises to 103°F., and no internal antipyretics are used. The good effects are not, it is thought, confined to the lowering of the fever. The mortality is here only about 8 per cent. lower than in the ordinary symptomatic method; but you shall hear much more on this subject. A convenience which we do not always see in American hospitals is the stand in each ward for the examination of the urine, and a microscope with the necessary reagents. A clinic is held daily, and on Wednesday it lasts two hours; so we concluded that the Freiburg professor did a very full day's work before 10 o'clock in the morning. In another ward we found waiting four candidates for the *Staats-Examen*—the test demanded by the State, and which is a very formidable affair, lasting for several days in each subject. We then went to the post-mortem room to see a case of bullet-wound of the brain. Ziegler, the professor of pathology, came here last year from Tübingen, and lends additional strength to the faculty, as he is one of the most progressive of the younger generation of workers in his department. To English and American students he has become well known through Macalister's translation of his work on

pathological anatomy, which has had an extraordinary success here, a sixth edition being in course of publication. He is a young-looking man, with a pleasing, frank manner, and he gave us a hearty welcome and asked us to come to the post-mortem room to see an examination of three students for the license (*Staats-Examen*), and a most practical test it was. The men drew lots for trunk, head, and position of scribe. The poor fellow who began the work had evidently not been a diligent attendant in the post-mortem room, for he bungled the inspection of the abdomen and thorax in a shocking manner. The examination of the heart—the *pons asinorum* of dissection—loosened his sweat centres, but Ziegler dealt with him most gently, considering the repeated aggravations. We could not wait to see the end, as it was a matter of several hours. In addition to this searching examination, there are others in pathological histology and general pathology. Von Kahlden, the Docent in pathology, showed us the laboratory, which is not large, but very well equipped, particularly for histological work. We afterward spent a very pleasant evening with Ziegler and von Kahlden, both of whom are genial, sociable men. Ziegler must be most industrious, as, in addition to the teaching, which occupies, he said, at least three hours a day, the revision of his text-book has been continuously in hand, the editions having followed each other so rapidly; then he edits his *Beiträge*, which has become a most important pathological journal, and recently, in conjunction, with von Kahlden, he has established the *Centralblatt für Pathologie*. By the way, I have sent out von Kahlden's new book on histological methods. Call the attention of S. to the section on Ehrlich's blood methods, which seems fuller than is usually given. To-day we saw Ziegler perform a most interesting autopsy before the class in a case of bullet-wound of the brain. Early in April the young lad had attempted suicide, and had discharged a revolver twice at his head. One bullet flattened against the frontal sinus, where it was found post-mortem; the second passed through the left hemisphere to the occipital lobe, where it lay on the median surface close to the cuneus. There was a firm-walled tract in the course of the bullet. An operation for abscess

had been performed yesterday, apparently only by enlargement of the original orifice and the insertion of a drainage-tube. There was extensive basic meningitis. The boy was hemiplegic and aphasic, but we did not learn whether an examination of his visual fields had been made, which would have been of great interest considering the position of the bullet in the occipital lobe.

One of the assistants showed us through the new surgical clinic, which is not yet completed. The operating theatre is very well arranged, with a composition stone floor and iron frames for the seats, so that the whole room can be flushed with the hose and thoroughly cleansed. Carbolic acid is the chief disinfectant, bichloride being rarely used, and the gauze for dressings is simply sterilized.

The Anatomical Institute is a fine new building, of about the size of one of the pay-wards, with a large lecture-room in the rear. Professor Wiedersheim is in charge, and, as is customary in German universities, is an anatomist in the wide and proper sense of the term, having to teach human and comparative anatomy and histology. One of his assistants takes the surgical anatomy, and this really meets the objection one often hears urged in America against a pure anatomist teaching medical students. In a well-equipped anatomical department how easy it would be to have one of the surgical assistants teach the senior students the surgical relations of the subject in special courses! The anatomical lecture-room is one of the best I have seen—high and spacious, with splendid light from the roof and sides. In the centre of the arena is a trap-door with hydraulic arrangement, by which, on turning a key in the floor, a table ascends from the preparation-room below. Wiedersheim is a beautiful draughtsman, and the blackboards were covered with elaborate diagrams, in colored chalks, of the origin of the cranial nerves. In the schemata which he thus makes of the nervous system from day to day he always uses the same colored chalk to indicate the same structure at different levels.

A man who has brought much renown to the university is Weismann, the professor of zoology, whose writings on heredity and Darwinism have attracted so much attention. In a recent

pamphlet, *Ueber die Hypothese einer Vererbung von Verletzungen*, he makes a strong criticism of the recorded instances of the inheritance of peculiarities of structure acquired by accident or disease. His collected essays have been issued in English by the Clarendon Press, at Oxford, and form perhaps the most notable contributions to the theory of evolution which have been made during the past decade.

We came to the conclusion that Freiburg had a most progressive university, and certainly, so far as medicine, pathology and anatomy are concerned, the post-graduate student will find everything that he could desire.—*N. Y. Med. Jour.*, July 19.

Angular Curvature; Rapidly Developing Paraplegia; Laminectomy; Recovery.—(By W. Arbuthnot Lane, M.S., F.R.C.S.)—I recently published a case of paraplegia of some standing associated with spinal disease, in which, on removal of the several laminæ forming the angle of the prominence, the cord was found to be compressed between the body of one vertebra and the margin of the lamina of the adjacent vertebra. No evidence of tubercular material was present in the spinal canal, and the boy recovered completely from the paraplegic condition. Since that time up to the present I have only come across one case of paraplegia associated with spinal disease which seemed likely to derive great benefit from a surgical operation. I have, however, operated upon the spine in paraplegia associated with fracture of the column with advantage, which, though only temporary and partial, was sufficient to encourage me in continuing to adopt the same treatment in suitable cases. The case of paraplegia due to spinal disease above referred to, and which I am about to describe, differs in many particulars from the one published last year. For instance, the paraplegia was developed with great rapidity, the loss of power of movement became complete within a few weeks of its first appearance, and the compression resulted, not from the rare condition of approximation of the lamina of one vertebra to the body of the other, but from the pressure exerted by a mass of tubercular material which intervened between the

laminæ and dura mater. The condition of the parts found at the operation showed that any further delay in resorting to operative interference would probably have been followed by a rapidly fatal result. The following are the brief particulars of the case :—

H. M., aged 32, was admitted into Guy's Hospital under my care on March 20th, 1890. He was a commercial traveller. His family history was good. He had had pleurisy in 1887. Two years ago he noticed a pain in the middle of his back while running. This pain remained localized at the same point for a time, but later it extended to the left hip. He regarded it as lumbago. Six months afterwards he noticed a prominence in the spine, which was treated as a ganglion. This soon developed into an angular curve, which continued to become more sharply angular at this point. While walking home on a snowy day, three weeks ago, he noticed for the first time that his right leg was weak and somewhat numb, and that his toes were inclined to catch as he drew his foot forwards. On admission he was found to be a delicate man, with hair rapidly becoming gray. There was a very sharp angular curve, its apex corresponding to the spine of the tenth dorsal vertebra. His right leg lay motionless in bed, the foot being extended and adducted by the contraction of the muscles of the calf. The resistance offered by these muscles prevented the foot being flexed to a right angle. When flexed as much as possible the patient could extend it slightly by means of the flexor muscles. He could not flex the knee, but if the knee were placed in a position of flexion he could forcibly extend it ; he could also adduct the thigh upon the pelvis. He could not voluntarily contract the extensor muscles of the leg. He did not notice any loss of power of the left leg, but there was some apparent paresis of the extensor muscles of the leg. The patellar reflexes were much exaggerated on both sides, and ankle-clonus was also present. A depressed patellar reflex could be obtained on the right side. The plantar, abdominal, epigastric and cremasteric reflexes were absent on both sides. There was impaired sensation on both sides, extending up to the inguinal region. On April 9th, his symptoms had progressed steadily since his admission on March 20th. Anæsthesia and

analgesia were almost complete on the right side up to the distribution of the ilio-inguinal and hypogastric nerves; above this sensation was impaired for an interval. The loss of sensation on the left side was very considerable, yet not so marked as on the right. The patient was then able to adduct the right thigh only very slightly when it was placed in a position of abduction, but could produce no other voluntary movement in the muscles of that limb. He could adduct the left thigh and extend the knee-joint if the latter was flexed for him. Otherwise he had no voluntary control over the muscles of the left leg. On April 19th some slight power of adduction of the left thigh remained. Analgesia existed over both legs, also anæsthesia to moderate stimuli, but at places he could feel a forcible pinch as a gentle stroke. Ankle clonus was marked on both sides, but especially on the right. The knee-jerks were marked. Plantar reflexes present and marked on both sides. On May 2nd he had completely lost power over both of his lower extremities. There was analgesia on both sides, and what ordinary sensation was left was very slight. The superficial and deep reflexes were more marked than on the last observation, and it had become possible to obtain an epigastric reflex on the right side. A few days later the epigastric reflex could be obtained on the left side. During the whole of this period his temperature had been normal, with occasional trifling variations. On May 13th he was put under chloroform and the soft parts were turned off the laminæ and spinous processes of the ninth, tenth and eleventh vertebræ. These were removed with bone forceps, when a large mass of granulation tissue, resembling in appearance and structure tubercular synovial membrane, protruded. This contained in its centre about eighty minims of purulent material. The whole of the growth was removed, together with a small process which extended forwards to the right of the dura matral sheath. The mass seemed to be centrally placed, and, except for the presence of the narrow prolongation already alluded to, there was no evidence at the time of the operation that the right segment of the cord was more compressed than the left, though it would seem probable that at an earlier period this material was placed more

to the right of the middle line. It could be scraped off the dura mater, which was quite intact and healthy. The wound was closed and two drainage-tubes inserted. These were removed on May 14th, on which day he said that his legs felt quite different. On the 16th he was able to move the left leg slightly, and sensation, both special and ordinary, had improved. He continued to gain power in both legs with rapidity, sensation apparently improving in the same proportion. Corresponding with the increase in power and sensation the reflexes became less exaggerated. During this period he suffered severely from cramps in his legs. At the present time, June 12th, he has lost his exaggerated reflexes, he has completely recovered sensation in the lower part of his trunk and in his legs, and he can move his legs freely and with much force. He is waiting till the spinal column has consolidated to be fitted with a suitable poroplastic support. Recovery has in his case been most complete.—*Lancet*, July 5, 1890.

Post-Epileptic Unconscious Automatic Actions —(By Walter S. Coleman, M.B., M.R.C.P.)—In a typical epileptic fit three distinct stages may be distinguished: (1) Sudden loss of consciousness, with or without warning; (2) convulsion, first tonic, and then clonic; (3) a longer or shorter period of continued unconsciousness, without convulsion. If a large number of cases be taken, we find great variation in the degree in which each of these stages is present. In some, for example, the convulsion may be severe, and the recovery of consciousness rapid; while in others, although the convulsion may be slight, the patient may remain in a state of unconsciousness for some time. Again, in the condition of *petit mal*, consciousness may not be lost, but may merely be "defective," and the stage of convulsion may be slight, or altogether absent, and so on. The object of this paper is to draw attention to some special variations of the third stage, in which the convulsion has ceased, but consciousness has not been restored. I am indebted to Dr. James Anderson and Dr. Tooth for permission to quote several cases illustrating the different varieties. The duration of this

stage, as is well known, is very variable. Frequently it is prolonged and so deep as to be spoken of as coma, in other cases it passes insensibly into normal sleep, and in others it is only momentary. As a rule, the patient lies perfectly still during this stage with all his muscles relaxed. Occasionally, however, without in the least recovering consciousness, the patient may perform automatic acts of great complexity. He may talk, run about aimlessly or in a fixed direction, and may become violent or even homicidal. This stage in these cases may last from a few seconds to several hours, and on recovering consciousness the patient has not the slightest recollection of what he may have been doing. Dr. Hughlings Jackson regards this condition as analogous to the paralysis of the affected limb, which is seen after epileptiform fits. He thinks that there is exhaustion of the "highest" (intellectual) centres in the brain, and that, in consequence, the normal control is taken off the lower centres. The condition is usually spoken of as the post-epileptic state. It certainly is subsequently to the convulsion, but should, strictly speaking, be regarded as the closing stage of the fit.

It is most important to bear in mind that these automatic actions may occur, not only after severe epileptic fits, but quite as frequently after minor seizures (*petit mal*) in which there may be nothing to attract the notice of anyone that there is anything the matter with the patient, who suddenly loses consciousness but does not fall, and immediately performs acts which are without reason, often grotesque, and not infrequently criminal. This is well illustrated by the following case. A clerk in the city, who had been attending at Queen-square Hospital for some years for epilepsy and *petit mal*, but who had never previously performed any automatic acts, was one day sent to a merchant's office where he had never been before. Almost immediately on entering he recollects experiencing his usual aura of an attack of *petit mal*, but remembers nothing further. It appears that he then pushed the merchant out of his chair, and sat down in it himself, displaced all the papers on the desk as if searching for something, got up without taking any of the papers, and abruptly left. He passed safely through the crowded city streets

to his own office, and then only did he recover consciousness. He went back on his errand, but had the greatest difficulty in persuading the merchant, who had not noticed the initial attack of *petit mal*, that he had acted unconsciously. Had he taken any paper of value his story would almost certainly have been disbelieved, and he would probably have been unable to clear himself from a charge of wilful theft. These automatic actions may be roughly divided into certain groups.

Cases in which the patient merely talks.—In these cases there is rarely any coherent line of thought to be detected. Utterance is usually rapid and indistinct, and is extremely like that of a person talking in his sleep. Not infrequently there is some word or phrase which is repeated after each attack. One girl who used to have as many as eighty attacks of *petit mal* in the day, used to say, " Fsum, tsum, tsum " about twenty times, and then abruptly recover consciousness. A boy who had frequent fits used to repeat " Forty, market, corner, book " over and over for about a minute after each. In France cases have been described as " arithmomaniacs," epileptics who are usually of weak intellect and occupy themselves habitually with simple arithmetical calculations. At the close of a fit these patients will often propound some problem, such as the number of seconds in 1500 years, etc.

Cases allied to somnambulism.—In one case actual somnambulism did occur after each nocturnal fit. The patient, a boy, was subject to slight fits during sleep, at the close of which he used always to get up, go to the window, open it and close it, and then return to his bed, without recovering consciousness at all. In another case a woman more than once got up and went out into the street in her night-dress. On one occasion she was taken to the police-station on the supposition that she was drunk. Another, a man, used to get up after each nocturnal fit, put on his clothes, and return to bed with them on. If he did not find his own clothes he put on those of his wife. This patient used also to perform automatic acts after diurnal fits. He used to brush his clothes vigorously, and then " tidy " the table by sweeping anything that was on it on to the floor. Closely allied are

those cases in which the patient walks about unconsciously after a diurnal fit (either severe or slight). One such patient, on several occasions, after an attack of *petit mal*, walked to a house two miles off which he had occupied three years previously, the present occupants of which did not know him. After a short stay he would go away, and not recover consciousness for some time afterwards. Another, who was going from the city to Islington, found himself on the platform of a suburban station to which he had no object in going. How he got there he has no recollection. In other cases (frequently spoken of as "procursive epilepsy"), at the close of the fit the patient suddenly springs to his feet and runs about at full speed, avoiding all obstacles. If restrained such patients may become extremely violent, as in a case which I have previously recorded (*Lancet*, Oct. 12th, 1889). In the case of another patient, whom I saw with Mr. Jago of Barnsbury, such attacks constituted seizures of *petit mal*. He frequently was seized with a sudden uncontrollable impulse to run at full speed, which he had to keep up for a minute or two.

Actions suggested by the feeling of malaise.—This feeling of malaise is adopted by Dr. Gowers, in his classical work on Epilepsy, as the explanation of those cases in which, at the close of a fit, patients commence to undress themselves, a proceeding which has given rise to unjust charges of indecent exposure or suggestion. Another of Dr. Gowers' patient used to climb up a dining-room table as if it were a flight of stairs. He regards both acts as the outcome of the patient's desire to go to bed.

Cases of so-called "kleptomania."—It is not at all uncommon for epileptic patients to transfer, without considerations of ownership, any articles which may be lying near them to their pockets. They appear to be guided by the proximity of the objects and not by their intrinsic value—a shaving brush, for instance, being selected quite as soon as a purse. One patient, who had been epileptic for some years, on one occasion had an attack of *petit mal* in an ironmonger's shop. He then placed a large coal-scuttle on each arm and deliberately walked out of the shop with them. There is usually no attempt to select articles, anything that is

handy being stowed away. In this respect the epileptic "kleptomaniac" is widely removed from most of the "kleptomaniacs" met with in the police-courts.

Violent acts after epileptic fits.—These are frequently seen in epileptic patients in asylums, and are often the cause of their being placed under restraint. In these cases also the acts of violence may occur in attacks of *petit mal*, and may therefore be quite sudden, without any appreciable warning or apparent cause. Undoubtedly many murderous assaults have been committed in the post-epileptic state, without their automatic character being recognized. In one case under my observation a youth aged 18 several times attempted to mutilate his genital organs after an epileptic fit, and on another he almost succeeded in doing the same to a younger brother. He was in consequence removed to an asylum.

Cases in which patients deliberately micturate.—This occurs in these cases, not as a part of the general convulsion, but as an apparently purposive act after an attack. Thus, Trousseau mentions a magistrate who on one occasion was observed to leave his court, go into the council chamber, micturate in the corner of it, and then return to his own seat without being at all aware of the action. A similar tendency was present in the case of a respectable girl, 20 years old, who came under observation recently. She had attended the hospital for twelve months for ordinary epileptic fits and frequent attacks of *petit mal*, consisting chiefly of sudden desire to pass urine. Usually the sensation had been transient, and she had been able to retain control over her bladder. On a recent occasion, however, when she was at a public entertainment, the attrek of *petit mal* was of longer duration than formerly, and while in the unconscious condition she deliberately lifted her clothes and began to void urine in public; and it was with the greatest difficulty that her friends prevented the authorities from handing her over to the police. Many other cases might be quoted, but the foregoing will serve to illustrate the kind of actions which may occur in the post-epileptic state. The frequency with which these phenomena followed attacks of *petit mal* impresses the necessity of exercising

great caution when called upon to give evidence in a police-court or elsewhere, as to the responsibility of a person for acts of this description. It is evident from these cases that it is not sufficient to exclude severe epileptic seizures, but a liability to *petit mal* must also be inquired for, and excluded, before it can be decided that criminal and other acts have not been involuntary epileptic phenomena. At the same time, the other extreme must be carefully avoided, that of regarding *all* acts of violence, etc., in epileptic patients as involuntary. Partly owing to the social isolation which is so often their lot, and partly to the cerebral deterioration which so frequently occurs, these patients may become suspicious and irritable, and their moral sense may become much blunted. It must be borne in mind that in post-epileptic phenomena there is usually no motive for the act, and there is often something grotesque about it; and when an epileptic, otherwise in good mental condition, steals valuable or desirable things, or deliberately commits some act with the view of gaining some advantage for himself, one should be very slow to give evidence that such acts are involuntary and part of an epileptic fit.—*London Lancet.*

Esmarch's Bandage as an Aid to Cocaine Anæsthesia in Minor Surgery — Some time ago Mr. Mayo Robson and Dr. Corning showed that the local anæsthetic effects of cocaine, when applied by subcutaneous injection, can be considerably intensified and prolonged, and the danger of poisoning prevented, by means of an Esmarch bandage applied above the site of the injection. Dr. E. Kummer, of Geneva, recently tried this method in over 50 cases of various minor surgical operations, including incision of whitlow, evulsion of ingrowing nails, excision of hypertrophied scars, or of subungual exostoses, ganglia of the wrist or fingers, stretching the median nerve, resection of phalanges or digits, etc. The results obtained were highly satisfactory, all the operations being totally painless, and no toxic phenomena occurring. As a rule, Dr. Kummer employs a 1 per cent. solution of hydrochlorate of cocaine, injecting several drops with a Pravaz syringe into

several points around and over the site of operation, and carefully preventing the reflux of the fluid by compression. The total maximum dose of the alkaloid in adults was never more than 0.05 gramme, the limit in children being 0.01-2. In operations on a finger or toe a thin elastic bandage was tied around its base; this was fully sufficient to secure a perfect anæsthesia of all local tissues, including bones. In operations higher up the limb two elastic bandages—a proximal and a distal one—were necessary, and even then only soft tissues were anæsthetized, the bone remaining sensitive. Anæsthesia was complete in about eight minutes, when the operation may be commenced. When the operation was finished, and before the dressing was applied, the wound was allowed to bleed moderately for some while, in order to allow as complete a washing-out as possible of the cocaine injected. When the application of Esmarch's bandage is impracticable cocaine produced anæsthesia of the skin alone, for which purpose an injection of 0.01 gramme was sufficient.—*British Medical Journal.*

A Case of Antifebrin Poisoning.—A young muscular, married woman, who suffered frequently from headache, and was in the habit of taking antifebrin under medical advice, on the 26th June, while suffering from headache, took at 7 A.M., fasting, about a teaspoonful of antifebrin which she herself shook into a glass of water out of a wooden box. This dose having no immediate effect after about ten minutes, she took such another. Her husband, afraid of the dangerous effects of such a large dose, gave her a glass of milk and soon afterwards a solution of alum, with the result of producing emesis. But in spite of that, she soon experienced vertigo, ringing noises in the ears, throbbing in the temples, dull pains in the head, and very great weakness, and the complexion became bluish gray. When Dr. Vierhuff saw the patient four hours after the antifebrin had been taken she presented the following appearance: lividity of countenance; blueness of the lips, fingers and toes; remarkable pallor of the whole surface of the body; pupils contracted; consciousness not impaired; heart's action weak; pulse

84, weak; temperature 36.4C. A heaped-up teaspoonful of Carlsbad salt as a purge and alcoholic stimulants were given. In about half an hour sudden collapse set in, the heart's action became irregular, the pulse became uncountable and barely perceptible, and breathing very shallow. Consciousness disappeared and the woman appeared to be moribund. The treatment then consisted of irritation applied to the soles and palms, the dashing of cold water on the body, and the subcutaneous injection of two grammes of a solution of camphorated oil and sulphuric ether. Consciousness gradually returned, but the patient remained extremely weak, and the collapsed condition lasted some three hours and a half, when improvement slowly set in. After the vomiting of some dark material the patient felt somewhat relieved and took some milk. Another faint turn occurring, Dr. Vierhuff made a solution of salt which was injected into the skin by means of an irrigator, to which a strong Pravaz syringe was attached. In the space of two hours as much as a beer-glassful had flown in. In the meantime camphorated oil and ether were injected as before. The introduction of this quantity of solution of salt into the circulation appeared to be of the greatest service, but the patient remained in a critical state for fourteen hours after the taking of the medicine. Anæmia and debility remained for some time, and it was a week before she was able to walk in her room.—*Centralblatt für die gesammte Therapie Wien.*, Juli, '90.

Typhoid Fever in the Hospitals of Paris.—M. Merklen, at the Société Médicale des Hôpitaux, read a report of a committee appointed to investigate this subject. It was found, as a result of their labors, that, although statistics were often deceptive, yet it would appear that the method of Brand yielded results slightly better than what is known as the symptomatic treatment. The difference in mortality is not more than 3 or 4 per cent., but it would probably be greater if all cases indiscriminately were subjected to bathing, and if the cold baths were not used, in some instances, until the patient had been for some days treated on the expectant plan. For all that, in Paris, the low mortality reported by Brand

(1 per cent.) and by Vogt (2.7 per cent.) is far from being reached. Our figures approach more nearly those reported by the civil hospitals of Lyons, viz., 7 or 8 per cent. Brand has stated that every case of typhoid fever in which the treatment by bathing has been begun before the fifth day will recover without complication. Unfortunately our hospital patients do not arrive at such an early stage of the disease. According to M. Peter, the cold bath constitutes a supreme resource against a supreme danger. It is in reality a powerful antithermic agent and an efficacious diuretic, but should it be reserved for exceptional cases or should it be adopted as a treatment suitable for all cases? It does not appear that the use of the bath has afforded results markedly more successful than those yielded by other plans of treatment. In the figures above mentioned, the combination of quinine and tepid bathing has furnished the best results (7.33 per cent.). M. Jaccoud, with a treatment combining antipyretics, cold sponging and tonics, has lost 71 cases in sixteen years, equivalent to 10.83 per cent.; M. Bouchard, with quinine, tepid baths gradually cooled down, and intestinal antisepsis, has a mortality of 11.16 in 421 cases. These results do not vary greatly from those obtained in our hospitals by the Brand method. Nevertheless, since 1882 the mortality from typhoid fever in our hospitals has been diminishing. In the previous report this successful result was attributed to the use of antipyretics. Since then, however, this rate of mortality has again fallen, and this is probably the result of the introduction of the bathing treatment. Better figures may be looked for, and the investigation committee hope that their efforts may be aided by the careful recording of cases and their results.—*La France Médicale.*

The Value of Vaccination.—Dr. Swaine makes the following report in the *British Medical Journal*, July 5th, 1890:—"I have just read in the *Journal* of May 10th, 1890, the paragraph regarding the efficacy of vaccination in prevention of smallpox and diminution of mortality observed among the native bearers of the Stanley expedition during the relief march

across Africa. Allow me also to testify to the efficacy of vaccination, which has given immunity from smallpox to the regiment (2nd Infantry H.C.) under my charge during three epidemics. The Sepoys and their families have been so thoroughly protected by vaccination and revaccination, that when stationed at Ellichpur Berar, where there was a severe epidemic of smallpox in the district and cantonment during April and May, 1883, although the men and families of the regiment (1,715 persons) had been in communication with the infected villages, only two cases occurred. These two were the children of Sepoys, and had not been vaccinated, as they had only arrived in the lines a few days before. All their brothers and sisters were vaccinated, and were free from smallpox. There were no other cases in the regiment. At Hingoli, where the depôt and families (800 persons) of the Sepoys were left during the absence of the regiment in Burmah, there was a severe epidemic of smallpox in the cantonment and surrounding villages (January to May, 1888), to which there was free communication, but there was not a single case among the families and depôt of the 2nd Infantry H.C. The regiment returned from Burmah and arrived at Hingoli in April, 1888, in the middle of the epidemic. The whole regiment enjoyed complete immunity, although the men were in a most favorable condition for contracting the disease, as they were anæmic and debilitated, owing to exposure and hardships during field service in the unhealthy climate of Burmah. During the epidemic of smallpox at this station (Jalna, Deccan) last year the same complete immunity was enjoyed by the men of the regiment and their families (1,537 persons). I have been now with this regiment eleven years, and during that time have had three epidemics of smallpox in the stations where we have been quartered, and have had only two cases in the regiment, and these were the two unvaccinated children at Ellichpur."

Treatment of Ringworm.—Mr. Jonathan Hutchinson (*Archives of Surgery*, January, 1890) says: "I have gradually, after trials of many other remedies, settled down in tolerable content upon a plan which relies chiefly upon

chrysophanic acid. My prescription, with the very rarest exceptions, is as follows: The liquor carbonis detergens (Wright's) is used as a wash in the proportion of a teaspoonful to a pint of hot water. With this the scalp is to be well washed twice a week, and all scales and crusts removed. The hair is to be shaved or cut close. The curative ointment, which is to be rubbed in more or less freely, according to its effects, night and morning, or every night only, by the same rule, is composed as follows:

℞	Acid Chrysophanic, . .	ʒi.
	Hydr. Amm. Chl., . .	gr. xx.
	Lanoline, ...	ʒi.
	Adip. Benzoæ, . . .	ʒvi.
	Liq. Carb. Deterg., . .	♏x.

"Misce fiat Ung."

Mr. Hutchinson remarks that the secret of success in treating ringworm consists in the patient continuance of the same remedy. He usually promises a cure to the persevering, but never a rapid one. It is only the impatient who are disappointed. Mr. H. has no faith in the rapid cure of ringworm.

Abuse of Purgatives.—Professor Sänger, at a meeting of a medical society at Leipzig, spoke very strongly on the abuse of purgatives. He complained that not only did the public buy immense quantities of aperient pills, draughts and waters, but that practitioners also pandered to the craving for instantaneous relief from constipation, so common amongst patients. Quack laxative medicines were advertised in every newspaper, on walls, in stations, and on the trees and rocks in romantic districts of Europe frequented by tourists. The competition in invention of a secret purgative was very keen. In this respect, a Polish doctor was not wise in his generation. This gentleman, who, according to Dr. Sänger, appeared to have no special anxiety about his patients' vermiform appendages, prescribed gravel, and boasted that he had already prescribed whole cart-loads; but a drug which anybody could scrape up in his garden could not be patented, and therefore would never gain the con-

fidence of the public, who love mystery in purgatives as in other matters. Professor Sänger said that the abuse of these drugs caused, not habitual constipation, but rather "artificial constipation." The evil was most prevalent amongst women with chronic pelvic diseases, real or imaginary. He ordered, in such cases, that all purgatives be discontinued. He never had bad results, even when constipation lasted for over a week. Belladonna was the only drug he ever used when flatulence, etc., set in, and when the constipation lasted for very long. He objected to dieting, which kept up a pernicious feeling of invalidism, and, finding that the patients drank little water, he made them take several glasses of filtered water daily, when fasting; occasionally whey or buttermilk was given as a change. Fruit, brown bread and exercise were recommended. Professor Sänger found this treatment far better than massage, visits to watering-places, enemata, and other familiar means to the same end. In the long run his patients had natural actions of the bowels, and were cured of their invalidism.—*Brit. Med. Journal.*

Painted and Dyed Sausages.—In the report of the Dairy Commissioner of New Jersey for the year 1889, the following interesting particulars as to the manufacture of sausages are given. Twelve samples of Bologna sausage were examined, with the result as follows:—

"The analysis of the Bologna and the skin in which the meat was placed showed that some dye, probably one of the anilines, was used to color the material, in order that some defect might be hidden or the article made to appear better than it really was; also, that some substance had been applied to the exterior of the sausage similar to varnish. Further analysis revealed the presence of triamidoazobenzine, or Bismarck brown, one of the aniline colors; this was in the meat. The skin, or 'casing,' was coated with a varnish containing shellac. This discovery was the means of arriving at all the details of the process employed. The sausage in question was prepared in the following way: after the meat was chopped and the sausage-meat thus prepared put into the casings, the sausage was boiled in a bath containing a portion of the following coloring

agent: Bismarck brown, fourteen parts; garnet red, two parts; water, one and one-half pints. This gave the sausage a brown color. When this process was complete the sausages were coated with a varnish composed of shellac, resin, oil and alcohol. In order that the small local manufacturers of sausage might engage in the practice of making dyed sausages, the compositions referred to above were offered for sale through the State, and the staining material was sold under the name of 'smokine' or 'liquid smoke.' The sale of the article was checked by the official action of the inspectors throughout the State."—*The Sanitarian*, July, 1890.

Herpes Zoster in Influenza.—Among the innumerable complications and sequelæ of influenza rashes and skin affections of various kinds have not been wanting. Urticaria, ecthyma, scarlatiniform, morbilliform, and polymorphous erythema, erythema nodosum, roseola, erysipelatoid dermatitis, purpura hæmorrhagica, herpes of the lip, nose and cheek, with several anomalous eruptions, have been reported by different observers. To this formidable list must now be added herpes zoster, At a meeting of the Medical Society of Bologna on March 28th, Dr. G. Finzi reported a case in a girl of 15, who, after recovering from a severe attack of influenza, was seized with neuralgic pain, accompanied by a pricking and burning sensation, shooting from the back round the right side. On being seen five days later, a chain of herpetic vesicles was found extending along the seventh intercostal space, the lymphatic glands in the axilla being swollen and tender, and pressure along the course of the seventh intercostal nerve making the patient scream with pain. In from eight to ten days the vesicles disappeared, the whole duration of the symptoms having been about a fortnight- At the same meeting Dr. Camillo Moglia reported a case of herpes zoster corresponding to the eleventh intercostal nerve of the right side in a girl of 18, in whom the disease appeared at the beginning of an attack of influenza, and lasted a month. Another case in which "bilateral universal" herpes zoster (which, from the description, seems to have been a vesicular eruption all over the body) showed itself on the fourth day of influenza is recorded by Dr. Luigi Pennetti in the *Riforma Medica* of May 29th; the eruption recurred in a milder form after a second attack of influenza. Altogether the herpes zoster lasted twenty-five days. In Dr. Finzi's case antipyrin relieved the pain, but Dr. Moglia's patient proved refractory to treatment.—*Brit. Med. Journal.*

Etiology and Treatment of Insomnia in Children.—(Simon, *Rev. mens. des Mal. de l'Enf.*, May, 1890.)—The treatment of insomnia will depend upon the age of the child when it is due to digestive trouble. The condition may be the result of too frequent nursing, to improper physical condition of the mother, or to some peculiarity about her milk. With bottle-fed children the insomnia may be traced to the bottle or its contents. Should the insomnia continue after these precautions have been taken, a teaspoonful of lime-water or of Vals water may be given between consecutive nursings, and as a laxative a teaspoonful of syrup of chicory or a pinch of magnesia in sweetened water. If insomnia is due to premature weaning, it will usually disappear if the child is restored to the breast. If weaning has occurred at the proper time, the regulation of the diet will go far toward relieving any tendency to insomnia. When insomnia is dependent on indigestion in children two years of age and upward, a dose of wine of rhubarb or of wine of pepsin at suitable intervals is indicated. To children five or six years of age give a few drops of the following mixture:

℞ Tinct. quinquinæ, . . 5.00 grammes.
" rhei, ... 2.00 "
" calumbæ . . . 2.00 "
" nucis vom. . . 0.50 gramme.

All food should be well cooked, and should be finely divided if there be any suspicion that it will not be well masticated.

Insomnia may be attributable to nervous disorders, which may be divided, in this connection, into several groups. The first group would include cerebral sclerosis, chronic hydrocephalus, cerebral tumors, bony lesions, with abscess of the brain. For insomnia from cerebral sclerosis, bromide of potash may be given until relief is obtained, either with or without the iodide. Should this be unavailing, valerian or chloral may be given, with calomel as a laxative. Similar treatment will be suitable with cerebral tumor, or chronic hydrocephalus, but not with cerebral abscess. The insomnia with the latter condition will continue until the pus is evacuated by suitable trepanation. Tho second group from which insomnia may result includes acute congestion, in-

cipient meningitis, and cerebral irritation. With acute congestion one should use mild revulsive agents, and, in addition, quinine, aconite, the bromides, and calomel. With incipient meningitis revulsives are also indicated behind the ear or at the nucha. With cerebral irritation, the bromides and chloral will prove beneficial, the latter being given by the rectum. For insomnia with headache, in growing children and those who droop under the confinement of school, a course of bitter tonics, gymnastics, lukewarm baths, and diminution of the hours of study, should be advised. With the neuralgias and chorea, the insomnia may be antagonized by suitable doses of antipyrine. If a child is hysterical, iron, valerian, asofœtida, and warm baths should be used the same as if no insomnia existed. With epilepsy, if the bromides are ineffectual, strychnine and belladonna should be tried. With all the foregoing conditions galvanization of the head will prove most beneficial in adults, but from the anatomical peculiarities of the case, if it is used in children, the current must be very weak, and not employed more than half a minute at a time. Static electricity is not open to the same objection, and gives admirable results if the insomnia proceeds from chorea, hysteria, headache, gastro-intestinal disorder, or disturbed mental balance. When insomnia is due to pain, as in Pott's disease, coxalgia, white swelling, etc., large doses of quinine will sometimes afford relief. If due to the fevers, opiates must be given, but very gradually, for their depressant action must be remembered, and also the fact that they lock up the secretions. With influenza, quinine or antipyrine will relieve insomnia, and with the rheumatic diathesis the same drugs with the addition of salicylate of soda.—*Amer. Jour. of Med. Sciences*, August, 1890.

A Contribution to the Etiology of Diphtheria. (By E. Klein, M.D., F.R.S.)—This paper, which was read at an ordinary meeting of the Royal Society on May 22 last, contained the substance of a research which had been undertaken by the Medical Department of the Local Government Board, and was communicated to the Society with the permission of the Medical Officer. The paper commenced by stating that the microbe of diphtheria had

been first described by Klebs in 1883, and first grown in artificial cultures by Löffler, but that the author, in the Report of the Medical Officer of the Local Government Board for 1889-90, had shown that two kinds of bacilli occur in diphtherial membranes, the second of which is the more virulent of the two. This more virulent bacillus acts very powerfully upon guinea-pigs by subcutaneous injection, producing a local tumour which precisely resembles, both in pathology and in microscopic section the diphtherial membrane of the human subject. In human diphtheria the bacillus is present only in the diphtherial membrane, but neither in the blood nor in the diseased viscera; and the same holds good with inoculated guinea-pigs. In subcutaneous inoculations with artificial cultures, although it causes in these animals disease and death, and although the lungs, intestines, and kidneys are greatly congested, the diphtherial bacillus remains limited to the seat of inoculation; from whence it has been concluded that the diphtherial membrane is the sole seat of multiplication of the bacillus, but this produces a chemical poison which is absorbed into the system, and which causes the generally diseased condition, and often death. Roux and Yersin have separated from artificial broth cultures the chemical products alone, and by injection of the latter into guinea-pigs have produced a general effect. In this year's Report of the Medical Officer to the Local Government Board the author has shown that such injection of cultures into guinea-pigs produces an active multiplication of the bacilli at the seat of injection, and that they can be obtained in pure culture on gelatine both from the local tumour and from the nearest lymph glands. On various occasions during the last three years the author has received information from health officers of a curious relation between a disease in cats and human diphtheria; such that a cat or cats were taken ill with a pulmonary disease, and when ill were nursed by children, and then these latter sickened with well-marked diphtheria. Or children were taken ill with diphtheria, and, either at the same time or afterwards, the cat or cats sickened. The disease in the cat was described as an acute lung trouble; the animals were quiet, did not feed, and seemed unable to swallow. In some cases they recovered; in

others they became emaciated, while the lung trouble increased, and they ultimately died. In one instance the cat malady, occurring where children were soon after attacked by diphtheria, was of a widespread nature; and *post-mortem* examination of the affected cats showed severe lung disease, broncho-pneumonia, and large white kidneys due to fatty degeneration of the entire cortex; a similar condition being also met with in the human subject as an effect of diphtheria. Subcutaneous inoculations of cats were carried out with particles of fresh human diphtherial membrane and with cultures of the diphtherial bacillus, producing a local diphtheritic swelling at the seat of inoculation and a general visceral disease. In the cases in which death followed after a few days the lungs were found much congested; when death followed after one or more weeks the lungs showed broncho-pneumonia, and the kidneys were enlarged and white, the cortex being in a state of fatty degeneration. If the disease lasted beyond five to seven days both kidneys were found uniformly white in the cortex; if of shorter duration the fatty degeneration was sometimes only in patches. Although in these experiments the bacillus was recoverable by cultivation from the swelling at the seat of inoculation, no bacilli were found in the lungs, the blood, or the kidneys; and hence the conclusion is justified that, as in human diphtheria and in that produced by the inoculation of guinea-pigs, so in these experimental cats the visceral disease was a result of the action of a chemical poison, produced by the growth of the bacillus at the seat of inoculation. From this it is seen that the similarity between the natural and the artificial disease in the cat is very great, and the question that arises is as to the manner in which the cat either receives or imparts the diphtherial contagium, in the natural disease. This natural disease in the cat is in its symptoms and pathology a lung disease, and it is reasonable to suppose from analogy that the lung is the organ in which the diphtherial process in the cat has its seat. The microscopic examination of the diseased lungs of cats dying from the natural disease bears out this supposition, the correctness of which has also been proved by direct experiment. Broth culture of the special bacillus was introduced into the wind-pipe in cats

without injury to the mucous membrane. The animals became ill with acute pneumonia, and on *post-mortem* examination, from two to seven days, there was found extensive pneumonia and fatty degeneration of the kidneys. The air passages contained an exudation like that of human diphtheria, and the bacilli were present in large numbers. During the last ten or twelve years several epidemics of diphtheria have been traced to milk, but the way in which the milk became contaminated with the diphtherial virus was not ascertained, although the evidence was very strong that it had not been from a case of the disease in the human subject. The cows which yielded the milk were not reported to be unhealthy, except from having sores or chaps on their teats. The author has made experiments which appear to him to throw much light upon these outbreaks.

Two perfectly healthy milch cows, which had been kept under observation for ten days prior to the experiment, were inoculated with a broth culture of the bacillus derived from human diphtheria. On the second and third days there was a soft tender swelling at the place of inoculation, which reached its *maximum* at the end of a week, and then gradually became smaller and firm. The animals had a raised temperature, and left off feeding on the second or third day, then to all appearance recovered. But on the eighth or tenth day they were attacked by slight cough, which gradually increased. Both became emaciated; one died on the fifteenth day, the other was killed (being very ill) on the twenty-fifth day. During the illness both animals had an eruption on the teats and skin of the udder, which appeared in successive crops. From one of the cows on the fifth day milk was drawn from a healthy teat, the outside of the teat and the milker's hand having first been thoroughly disinfected. From this milk cultivations were made, and it was found that thirty-two colonies of the diphtheria bacillus, without any contamination, were obtained from a single cubic centimetre. Contrary, therefore, to what happens in the guinea-pig and in the cat, the diphtheria bacillus passes from the seat of inoculation into the system of the cow, and makes its appearance in the milk. The presence of the bacillus in the eruption on the udder was also demonstrated, both by microscopic examination

and by experiment. Two calves were inoculated with matter from this eruption, and both developed a similar one, besides becoming affected with severe broncho-pneumonia and fatty degeneration of the kidneys. It therefore appears that a definite disease can be produced in the cow by the diphtheria bacillus, and the contamination of the milk shows that the bacillus, as such, invades the general system.

At the beginning of the month of April two cats died at the Brown Institution, after having been ill for several days, with symptoms like those of natural cat diphtheria. Between the beginning of April and the beginning of May, fourteen cats became similarly affected, some more severely than others, and some died with the characteristic morbid changes. This epidemic, as it may be called, commenced with the illness of the first two cats about the end of March; and the question arises as to how the disease originated in these two animals. No cats had been ill in their shed, and the two affected ones were healthy when received at the institution some weeks before. But during the latter half of March there were in the stables of the institution two milch cows ill with diphtheria induced by inoculation with the human diphtheria bacillus—in fact, the two cows already referred to. The diphtheria bacillus was found in the milk drawn from one of these animals on the fifth day after inoculation, and orders were given to the attendant that the milk of both cows was to be thrown away. This order was not obeyed, for part of the milk was given to the two cats above mentioned, and they sickened as described, within a day or two afterwards. It ought to be mentioned that the man in attendance on the cows had also charge of the cats, but, in view of the fact that he was himself free from the disease, the possibility of his having conveyed it from the cows to the cats may be disregarded.—*The Practitioner.*

Inflammation of Bones of Typhoid Origin.—According to the Berlin correspondent of the *Medical Press and Circular* for June 4, 1890, Herr Fürbringer introduced this subject at the recent Congress of Medicine. He remarked that the subject had never been regularly treated in any work, and that in treatises on typhoid the subject only

came in for treatment as a complication, but it had been well described abroad, and especially by French writers. In 1885, Freund gave an account of the literature of the subject, and reported five cases of his own. In the preceding year seventeen cases observed by other authors followed, among which were eight by Ebermaier, who was the first to furnish proof that the affection owed its origin to the typhoid bacillus. The disease consisted in longer or shorter, slighter or heavier, attacks of periostitis and osteomyelitis of a suppurative or non-suppurative form. The attacks befall the most varied parts of the bony structure. A careful examination of the recorded cases show that a large number of the cases described must be excluded from the category of typhoid osteitis. The author had only observed the disease five times in sixteen hundred cases of typhoid fever. The most remarkable case was that of a boy of 7½, in whom, in the course of four months, seven outbreaks of the disease attacked ten different parts of the bony system. The boy recovered, and indeed began to mend from the day on which the crisis of an attack of influenza occurred, the only good deed, the author remarks, he had ever witnessed from the miserable *grippe*. The other four cases were observed in the hospital Friedrichshain—two boys aged 12, a man aged 21, and a woman aged 25. The last patient showed a pyæmic temperature curve, with rigors, although suppuration never took place. Disease of the ribs awakened suspicion of a hepatic abscess. Recovery took place in this case also, although the patient was at one time as good as given up. In the third case the trochanter and ischium were chiefly affected, the diagnosis as marked on the note of admission being coxitis. In the fourth case the skull was the part affected, in a rather severe but evanescent manner. The fifth patient died after cessation of the osteomyelitis from hæmatopyopneumothorax, in consequence of bursting of a necrotic collection in the lungs. The author preferred the term osteoperiostitis, as a separation of the osteitis from the periostitis was not possible. His cases confirmed the view of Ebermaier that the typhoid bacilli wandered from the medulla of bones to the periosteum. As regards symptomatology, he remarked quite striking exacerbations of pain, and the frequency of the occurrence of the

disease without suppuration. Some of the suppuration cases were due to sepsis, scrofulous tendencies, advanced disease, and possibly improper treatment. Regression took place as in syphilis, but the tophi did not so completely disappear as in that disease.—*Therapeutic Gazette.*

Treatment of Acute Gonorrhœa.—In the *Archiv für Dermatologie und Syphilis* appears a paper by Dr. Friedheim, containing an elaborate account of a large number of experiments made in the clinic of Professor Neisser, of Breslau, with the view of determining the best treatment in acute gonorrhœa. The object aimed at was to find the local application which posecssed in the highest degree the power (1) of killing the gonococci, (2) of influencing the inflammatory phenomena, (3) of promoting epithelial desquamation, and thereby securing mechanical elimination of the micro-organisms. Among the numerous drugs experimented with were various preparations of mercury, including the perchloride and salicylate, permanganate of potash, iodoform, boric acid, pyrogallic acid, resorcin, antipyrin, thallin, and many others. But of all those now tried, the best results, as tested by the microscope, were obtained from a solution of nitrate of silver, of a strength varying from 1 in 4,000 to 1 in 2,000. The treatment is begun by the injection of this solution in the ordinary way, from four to six times a day, the result being that at first the discharge becomes more abundant, thicker and more purulent; but in about four days the secretion diminishes, becomes thin, and contains a quantity of epithelium. The gonococci also diminish in a remarkable manner, and after a few days disappear altogether. When this has taken place, the number of injections of nitrate of silver is reduced to two and afterwards to one daily; and other injections, such as boric acid or some preparation of zinc, are used as well. But, in spite of the almost total disappearance of the discharge, the one daily injection of the nitrate of silver is to be kept up for many weeks. In cases where the nitrate of silver could not be borne, even in weaker solutions than those above mentioned, salicylate of mercury, or thallin, or the chloroborate of sodium was substituted with a certain amount of success; and in the very rare

cases in which no antibacterial injection could be tolerated, internal remedies were resorted to. Of these, cubebs, turpentine, oil of gaultheria, oil of sandal-wood, kava-kava, ichthyol, creolin and copaiba were tried; but among these, copaiba alone, and that only in some cases, was found to have any decided effect on the gonococci. As regards the danger of complications from the use of the nitrate of silver injections, it was found that this mode of treatment was really the best preventive. Thus, among twelve hundred cases of gonorrhœa treated in various ways, there were one hundred and sixty-four of epididymitis, but in one hundred and forty-two of these the epididymitis was present when the patient first came under treatment; while of the remaining twenty-two cases, only one was being treated with nitrate of silver. The total number of cases given in the table which is appended to Dr. Friedheim's paper as having been treated by nitrate of silver injections is three hundred and eighteen, and in two hundred and thirty-seven of these it is stated that the antibacterial action of the drug was proved.—*British Medical Journal*, May 24, 1890.

A Plea for Circumcision.—"It is surely not needful to seek any recondite motive for the origin of the practice of circumcision. No one who has seen the superior cleanliness of a Hebrew penis can have avoided a very strong impression in favor of the removal of the fore-skin. It constitutes a harbor for filth, and is a constant source of irritation. It conduces to masturbation, and adds to the difficulties of sexual continence. It increases the risk of syphilis in early life, and of cancer in the aged. I have never seen cancer of the penis in a Jew, and chancres are rare."—(*Jonathan Hutchinson in Archives of Surgery for July*, 1890.

THE

Montreal Medical Journal.

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TOO MANY LECTURES.

The large number of didactic lectures demanded by examining boards has recently attracted attention amongst those interested in medical education. Our views upon the matter have already been expressed, but we would particularly draw the attention of our readers to the proceedings of the General Council of Medical Education of Great Britain, before which body the subject was discussed in June last. It is in the Scotch universities that lecturing is particularly used as a means of imparting instruction, and it has already been stated in our pages that the Canadian student has to attend a few hundred more lectures in the four years of his career than are demanded of the Scotch student. Dr. Leishman, whose experience in Scotland seems to have taught him that teaching was better than lecturing, moved the adoption of the recommendation " that the number of systematic lectures in each course, especially in winter, may with great advantage be restricted to two or three weekly, and that the time so gained should be devoted to class examinations, tutorial instruction, and practical work." He was in favor not so much of cutting down the actual time devoted to any subject, but of allowing the professor to substitute for lectures other and more useful means of imparting knowledge. Dr. Struthers thought that two or three lectures a week were sufficient. The lectures in Scotland were in excess. As to the number of courses, one seemed to be considered sufficient. Mr. Mitchell Banks observed that the Scotch lecturer appeared to be a sort of man-eating tiger amongst lecturers. He said he had heard of being preached to death by

wild curates, but an even more terrible catastrophe would be to be lectured to death by Scotch professors, a fate which he himself had narrowly escaped. Restriction of the number of lectures was indispensable. Sir John Simon considered that it was absurd to require a student to attend lectures on subjects which might equally well be learned from textbooks. The present abundance of systematic lectures was in excess of the requirements of the age. Eventually an amendment was carried as follows: "That regulations requiring attendance on systematic courses ought not to require attendance on more than two or three lectures weekly in any one course, nor an attendance upon more than two or three lectures on any one day."

We wish the gentlemen who have devoted their energies to the construction of medical boards would look abroad beyond the boundaries of their own province, and see what is done elsewhere in medical education. Reform would soon follow, and we would hear no more of the addition of lectures to the already overburdened course.

THE BERLIN MEDICAL CONGRESS.

According to the cabled reports received by the *New York Medical Record*, the tenth International Congress would appear to have been a great success. Nearly eight thousand physicians, representing every nation in the globe, were in attendance, of which number a very large proportion came from this continent. A proposition to hold the next Congress at St. Petersburg in 1893 was rejected, and the place of meeting decided upon was Rome.

Recent Appointment to the Ontario Medical Council.—At the last meeting of the Ontario Medical Council, Dr. Oldwright, Professor of Sanitary Science in the University of Toronto, was appointed Examiner in Chemistry in the place of Dr. Acheson. One unacquainted with the peculiarities of Canadian licensing boards, and of that of Ontario in particular, might be led to suppose that Dr. Oldwright was a distinguished chemist whose services in that special branch of science entitled him to

advancement and honour. This is not the plan followed by the Ontario Council. Dr. Oldwright was appointed an examiner in chemistry because he was innocent of any connection with the teaching of that branch and had devoted himself to other studies. We heartily commend the action of the worthy professor of sanitary science who promptly declined the appointment and refused to allow the stupidity of the Council to place him in a false position. The absurd rule by which teachers are excluded from taking part in examinations would soon be done away with were those appointed gifted with as much common sense and self-respect as was the last appointed examiner in chemistry.

The College of Physicians of Philadelphia.—The Alvarenga prize, of the College of Physicians of Philadelphia, consisting of one year's income of the bequest of the late Senor Alvarenga, of Lisbon, has been awarded to Dr. R. W. Philip, of the Victoria Dispensary for Consumption and Diseases of the Chest, Edinburgh, for his Essay on Pulmonary Tuberculosis, which will be published by the College.

Obituary.

Wm. Kitchen Parker, M.R.C.S.E., L.S.A., F.R.S., F.L.S., F.Z.S.—The death of this eminent man will be regretted by all scientific anatomists. His contributions to morphological anatomy were numerous and valuable, and his published works are well known to students of higher anatomy. For years Prof. Parker held the chair of Comparative Anatomy at the Royal College of Surgeons, England, and for a considerable number of years the Royal Society placed a large proportion of the Government grant for scientific research at the disposal of Prof. Parker for the purpose of illustrating and publishing his works. During the time Professor Parker was carrying on his scientific labors he was also engaged in a large and general practice. He had no private means, and as morphological anatomy is not a very lucrative pastime he was obliged to submit himself to the drudgery of general practice to get a living. A few years ago he retired on a small pension from the Government, and since

then he has devoted his whole time to the subject he loved so well. Among the many valuable works published by him are the following: "Morphology of the Skull," "The Shoulder Girdle," and "The Structure and Development of the Skull in Mammalia." To the general reader he was known by a fascinating work called "Mammalian Descent." His contributions to the transactions and proceedings of the Royal Society, Zoological Society, and various other societies were many and of great value. Two of his sons are well known zoologists.

Personal.

—Dr. T. Johnson-Alloway and Dr. Buller sailed for Europe in the last week in July.

—Dr. F. M. Harkin, of the class of 1885, has been appointed house surgeon of the Emergency Hospital at Marquette, Mich.

—Dr. W. E. Ellis, of the class of 1887, has been appointed surgeon of the Milwaukee, Lake Shore and Western Railway Company, at Watersmeet, Michigan.

Medical Items.

—The annual meeting of the American Climatological Association will be held in Denver, Sept. 2nd to 4th, and a successful gathering is expected. The Western Passenger Traffic Association has granted a one fare for round trip rate; tickets to be bought August 31st and September 1st, and good for return till September 25th, which is open to others as well us members. One-third of the time is expected to be given exclusively to the study of Colorado subjects, and after the three days' sessions the visiting physicians are to be given an opportunity personally to investigate the mountain resorts by a series of complimentary excursions.—*N. Y. Med. Record.*

Medical Congresses.—The following is an extract from a leading article in a recent number of the *N. Y. Med. Record* on the International Medical Congress at Berlin. Unfortunately, in some respects, the writer is not very far wrong: "The true

science of medicine is modest and of a retiring disposition. It likes to do its work in quiet corners. It makes simple announcements of the results of its labors. Not so with the frequenters and hangers-on of congresses. What would hopelessly disturb pure science, is the very life-blood and delight of pseudo-science. The former despises what the latter revels in. Every congress thus far has suffered from the polyglot clamor of those who go to blow their own trumpets, those who are mere medical politicians, wire-pullers, open advertisers, brazen-faced priority-claimers, and a host of people who have their little axes to grind. True merit too often stays at home. . . . . But the consultation-hunters, the claim-everything agents, the notoriety-promoters, the enterprising hob-nobbers, the 'strictly-business' doctors, and those little fellows who so dearly love to rub up against the big fellows—those and others like them are always out in full force."

A Funny Health Officer.—The Michigan State Board of Health recently took Health Officer Davis, of Close Village, to task for failing to send in his weekly reports. His reply was unique. He says: "There has not been enough sickness here in the last two or three years to do much good. The physicians find time to go to Milwaukee on excursions, serve as jurors in Justice courts, sit around on drygoods boxes, and beg tobacco, chew gum, and swap lies. A few sporadic cases of measles have existed, but they were treated mostly by old women, and no deaths occurred. There was an undertaker in the village, but he is now in the State prison. It is hoped and expected that when green truck gets around, melons plenty, and cucumbers in abundance, that something may revive business. If it does I will let you know."—*Medical Record.*

Arsenic in Wall-Papers.—The *British Medical Journal* reports a simple and easily applied test of arsenic in wall-papers, devised by F. F. Grenstted, as follows: Turn down an ordinary gas jet to a point until the flame is wholly blue. When this has been done, a strip of the paper suspected to contain arsenic is cut one-sixteenth of an inch wide and an inch or two long.

Directly the edge of this paper is brought into contact with the outer edge of the gas flame, a gray coloration, due to arsenic, will be seen in the flame (test No. 1). The paper is burned a little, and the fumes that are given off will be found to have a strong garlic-like odor, due to the vapor of arsenic acid (test No. 2). Take the paper away from the flame and look at the charred end; the carbon will be colored a bronze red. This is a copper reduced by the carbon (test No. 3). Being now away from the flame, in a fine state of division, the copper is slightly oxidized by the air, and on placing the charred end, a second time, not too far into the flame, the flame will now be colored green by copper (test No. 4). By this simple means it is possible to form an opinion, without apparatus and without leaving the room, as to whether any wall-paper contains arsenic; for copper arseniate is commonly used in preparing wall-papers. The first and second tests would be yielded by an paper containing arsenic in considerable quantities.

The Reign of Good Queen Bess.—Dr. B. W. Richardson, in his recently published abridgment of "The Health of Nations," the *magnum opus* of the lamented Sir Edwin Chadwick, in a chapter under the heading "Progressive Health," gives a comparison of mortality in the Elizabethan and Victorian eras:—

"According to John Graunt's reports, from the parish registers, the condition of the whole city of London, in the time of Queen Elizabeth, was very much that of a 'slum.' The death rate was in fact that of a slum, it was more than 40 per thousand, but now, under some advance towards unity and centralization, it is about 20 per thousand, still including upwards of one-third of preventable deaths. The death-rate then largely exceeded the birth-rate, while now the reverse is the case. The death-rate of the children under five years was then one-third, or 33 per 100. It is now 27 per 100, and grievously too heavy. The deaths from old age, or the age then called old, of seventy, were 7 per cent., they are now sadly too low, but even in the city proper they are 18 per cent. As to personal security, John Graunt boasted that not more than one in two thousand was then

murdered annually, which he ascribes to good local government. At the same rate now murders in the whole of the metropolis should amount to no less than 2,500 annually, whereas they actually amount to an average of no more than 12 for the whole five millions of population—a population which approaches to that of the whole kingdom of England and Wales in the time of Elizabeth."

How Respect for Science is Enforced in Russia.—*Le Journal de Médecine de Paris* (22 Juin, 1890) is responsible for the following:—"A correspondent at St. Petersburg writes: 'An extraordinary affair at Odessa has come to my knowledge. There is in the city in question an Institute of Bacteriology, founded and maintained in the municipality. The director is a Dr. Bardach, a pupil of Pasteur, who superintends the vaccination of cattle against anthrax and Siberian plague, after the method of Pasteur. The Russian Imperial Government sent circulars to all the landed proprietors of the south of Russia requiring them to have their cattle vaccinated, and the brothers Pankvatjeff, two millionaires, accordingly sent for Dr. Bardach the other day to come to their estates in order to vaccinate their cattle. Unfortunately the doctor made some mistake in the vaccine virus, and in two days there died 3,552 sheep, 1,200 horned cattle, and some hundreds of horses. Their owners brought an action against the Bacteriological Institute—that is to say, against the city of Odessa—and demanded damages. The case was tried a few days ago. The counsel for the city stigmatized the brothers Pankvatjeff as persons knowing nothing of scientific matters, and stated that he was at a loss how to characterize 'persons who dared attack the great and celebrated *savant* Pasteur.' In short, he pleaded so effectually that not only did the brothers Pankvatjeff fail to obtain a verdict, but the tribunal condemned them to pay, in common, a fine of 3,500 francs, as well as the costs of the trial, *pour leur apprendre a mieux estimer la science.*"

THE

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Original Communications.

CLINICAL LECTURE

UPON A CASE OF MITRAL VALVE DISEASE.

DELIVERED AT THE GENERAL HOSPITAL, FEB. 26TH, 1890.

BY R. L. MACDONNELL, M.D.,

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GENTLEMEN,—At our visit the day before yesterday we examined together a new arrival into the clinical wards, Jean F., whose history is instructive and interesting. You had an opportunity of hearing him tell his own story, and we examined together the physical signs presented. To-day I propose to resume the study of the case. F—— is an old country Frenchman, aged 50. He is intelligent, and gives a well-connected personal history. He has led a roving life, having been a soldier in the French army, subsequently a miner and western adventurer, and now he describes himself as a teacher of languages, having in his travels learnt Spanish, German and English. So far as we can learn he has never been intemperate, nor has he ever had syphilis. In childhood he had scarlet fever, and he has suffered from three attacks of rheumatism—the first at the age of 20, while a soldier; again in 1871 he was laid up for three months, and lastly in 1886 while he was working at the silver mines in New Mexico he was exposed on one occasion to great cold, and immediately afterwards was attacked with pain in nearly all the joints. This illness lasted nine months, and he understood from his medical attendant that it was of the nature

of acute rheumatism. During the course of the attack, after he had been ill some three or four months, he became suddenly paralysed in the right side of the body. He was aware, previously to this attack, that the heart had been affected by the rheumatism.

You know that in the course of acute rheumatism, in a large proportion of cases, probably in as many as fifty per cent., the morbid process attacks the valves of the heart, being particular in nearly every instance to select the mitral valve. Rheumatism is the usual cause of endocarditis, and in that disease certain changes take place in the valve. The smooth, glistening surface becomes vascular and roughened by an exudation leading to a deposit of fibrin. The process may be likened to the freezing of a river; the ice tends to form upon rough projections, shallow bays, rocks, in fact anything that presents an obstacle to the rapid current, while in deep places, up against smooth embankments and wharves ice does not so readily form. The fibrin of the blood is not only always ready to deposit itself upon a rough surface, but in acute rheumatism it is put into a condition in which coagulation is especially prone to occur. A deposit of fibrin, then, having taken place, a piece of it becomes detached, enters the circulation, and is carried from the big arteries to the little arteries, until it finally sticks in one of them, usually a cerebral artery. This is by no means an uncommon occurrence. Disease of the valves of the left side of the heart is most frequently the starting-point of this embolism. Here paralysis of the opposite side was the result. The vessel in which the clot is arrested is almost always one of the Sylvian arteries. It was formerly commonly taught that the left artery was more liable to plugging than that on the right, but this, it appears, is not the case, or at least it has not been confirmed by Fagge's observations in the post-mortem records of Guy's Hospital. Among twenty-one cases of embolism limited to the Sylvian artery of one side, he found that there were eleven in which the left one was affected and ten in which the clot entered the right artery.

The immediate result of plugging of the Sylvian artery, if that, indeed, was what occurred, was to shut off the blood from those parts of the brain in which the motor fibres of the right side of

the body take their origin. There was a sudden cessation of nutrition in the affected area, equivalent to a traumatic irritation, and paralysis was the result. Recovery was slow, but at the end of nine months he found himself upon his feet again.

Possibly the attack of rheumatism in 1886 may not be alone to blame for the endocarditis and the embolism. He was 46 in 1886, and rheumatism does not often, in fact you may say it never affects persons at this age unless they have had previous attacks. Nor is at all likely that the attack in question gave rise to the endocarditis. The tendency to endocarditis diminishes rapidly with age, especially after the thirtieth year, and more particularly in men, since women are more subject to the cardiac complications of rheumatism than are men. It is probable that the original endocarditis dates from one of his earlier attacks of acute rheumatism, and that in 1886 it took on fresh action, and this is rendered likely from the observed fact that embolism is specially apt to occur when valves previously the seat of disease undergo a fresh attack of acute endocarditis.

For the next three years he seems to have been in fairly good health, but notice that his occupation was no longer active, but was sedentary, and he became a teacher of languages. He never felt as strong since that attack of rheumatism. On the 22nd of December last, after partaking of an unusually good dinner, he suffered his first attack of palpitation and pain in the precordial region. The abdomen and the feet became swollen at night, and it was with great difficulty that he could attend to his daily duties. On the 14th February last, twelve days ago, he was obliged to take to bed. So far he has complained of the three symptoms of mitral regurgitation—(1) Pain. (2) Palpitation. (3) Dyspnœa on exertion.

State on admission.—It is evident at a glance that some serious disturbance of the circulation exists, for his general appearance and decubitus is that of a man who is suffering from dyspnœa. He sits up in bed, and in his conversation with me you observe his breathlessness. The face is pale, and there is a slight degree of œdema in the lids. The superficial arteries, the temporal and the carotid, do not pulsate visibly, but the veins

in the neck are in a state of active pulsation. The conjunctivæ are subicteroid. The abdomen is evidently enlarged and the feet are œdematous. He complains of uneasy sensations and pain in the precordial region, especially over the right hypochondrium. The temperature is normal. The pulse small and weak, but not irregular. Respirations are 28 to the minute. Over the precordial region we notice a general diffuse impulse, but the exact position of the apex cannot be made out. No thrill is perceptible. The area of superficial dulness is increased. It begins at the third costal cartilage above, extends to a point about an inch beyond the nipple and an inch below it, and on the right side it corresponds with a line one inch beyond the right edge of the sternum. The outline is made out with difficulty. The heart is evidently enlarged, and particularly on its right side. The absence of perceptible apex-beat is probably the result of right heart dilatation, which would push the apex away from the chest-wall. The pulsation in the veins of the neck shows there is leakage through the tricuspid orifice. This is a common result of disease beginning in the left side of the heart, not because the tricuspid valves become diseased, for it is rarely that they are ever attacked by endocarditis, but because the walls of the right heart become involved in the general deterioration of the muscular structure of the whole organ. The worst feature in the case is the presence of this tricuspid regurgitation, which shows that the endocarditis has gradually affected the heart structures, travelling backwards in the course of the circulation from the mitral to the tricuspid valve. At the apex-beat the sounds are regular but weak. The first sound over mitral area is replaced by a murmur, which can be heard around the chest as far as the boundary of the axilla, but it is not heard in any other than the mitral area. It is distinct, bnt not loud.

State of the lungs.—In diseases of the heart, the state of the lungs is of more or at least of equal importance to the state of the heart, because valve affections most commonly kill by interference with the lungs. The degree, therefore, to which the lungs are affected measures to a certain extent the dangers of the case. The respirations are quick and shallow. There is slight

cough. Both pulmonary bases are dull for a limited extent, and from the spines of the scapulæ downwards fine crepitating râles can be heard. There is therefore a moderate degree of pulmonary œdema. The lung changes are not as advanced as you might expect when you take into consideration the generally deranged condition of the circulation. The reason for this lies in the fact that the occurrence of tricuspid regurgitation tends to relieve pulmonary congestion, inasmuch as it weakens the force with which the right ventricle contracts. Consequently less blood is pumped into the lungs, because we see the veins in the neck receiving at each beat of the right ventricle some of the blood which ought to go to the lungs.

The appetite is poor; the bowels fairly regular. He complains of pain in the epigastrium and right hypochondrium. There is no vomiting, and he has never brought up blood. The abdomen is distended and measures at its widest part 37 inches. Fluctuation is present. There is dulness on percussion in both flanks, which is moveable on the right side, but not so on the left, owing probably to enlargement of the spleen. There is no fluctuation. Note the rapid onset of this abdominal dropsy, which is the immediate result of the regurgitation through the tricuspid. The abdomen suffers first, or nearly first, when this takes place because of the absence of valves in its veins, and this damming up in time acts on the portal circulation, producing symptoms due to the inability of organs to clear themselves of their blood. Congestions ensue, function is interfered with, and symptoms result. The pain and distress at the stomach of which this poor man complains is probably the result of the damming back of the blood in the gastric veins. The liver is large. Hepatic dulness in right mammary line extends fully three inches below the margin of ribs. The smooth surface of the organ can be readily felt separated from the abdominal wall by a thin layer of fluid. The spleen is large, possibly as the result of the old standing malarial disease, possibly as the result of the congestion from which it is evident all the viscera are suffering.

The quantity of urine passed is less than the normal. Since

his admission but some twenty or thirty ounces are voided daily. The fluid is high-coloured and cloudy; contains a whitish deposit which microscopical examination shows to consist of phosphates. The reaction is alkaline; sp. gr. 1025; no sugar; no albumen. Considerable bile pigment. After he had been in hospital a few days the bile pigment almost entirely disappeared. He is the subject of a right inguinal hernia and there is a discharging sore upon his right tibia.

Such is an outline of the history of the case before us. The sequence of events seems very plain.

1—Rheumatism.

2—Endocarditis.

3—Embolism and hemiplegia; recovery.

4—Enfeebled health.

5—Compensation and restoration to comparatively good health.

6—Failure of compensation, shown by precordial pain, palpitation, dyspnœa, cough, symptoms resulting from congestion of abdominal organs, general anasarca.

General effects of valvular disease.—Regard the circulatory and the respiratory system as one machine. Interference with that machine at any point produces a disarrangement of the whole, more especially is this the case when the part disarranged, as in the case of the heart, is the one which is so situated as to be a central point to all the machinery by which the body works.

The general effect of all valvular lesions, no matter where they may be situated, is to enrich the venous and impoverish the arterial systems.

In front of the lesion there is too little blood and behind it there is too much; *e.g.*, mitral valve lesions cause—

1—Increased pressure in left auricle.

2—Diminished pressure in left ventricle.

Therefore less pressure in aorta.

3—Back pressure is increased and extends to the pulmonary veins.

Therefore the first effect of mitral lesions is to impede the pulmonary circulation.

Compensation.—In the progress of a case of valvular lesion

there is a double process at work, a process of injury to the system and a process by which this injury is minimized, and to this latter we apply the term "compensation," which, it may be stated, generally consists in hypertrophy of the cavity immediately behind this lesion.

What occurred in this case after the mitral valve became incompetent?

1. Dilatation of left auricle.
2. Hypertrophy of the same.
3. Circulation in lung impeded.
4. Increased tension in pulmonary artery.
5. Dilatation of the right ventricle.
6. Tricuspid regurgitation.

When the compensation begins to fail, the cavities which are behind the valves begin to dilate. This may be checked and the power of the heart restored for a time. Changes then occur in the nutrition of the cardiac muscle, in the vessels, and in the general nutrition, bringing on *failure of compensation.* In this state the cavity has no longer power to expel its contents fully into the vessels, so it becomes increasingly distended and structurally deteriorated.

Symptoms of failing compensation.—1. Attacks of palpitation from slight causes, or even during sleep. In this case an over-distended stomach was the exciting cause. Remember that a deranged stomach can cause a derangement of the heart in two ways. By its bulk it can press upon the heart and hamper its action, and through its nerves it can derange those of the heart. You remember that the vagus goes to both.

2. Irregularity of pulse, due to abortive contractions which do not reach the wrist, or to contractions unequal in force or in the quantity of blood expelled. The pulse becomes small, unequal, irregular and compressible.

3. Cardiac oppression and anginal attacks from distension of the cavities of the heart.

4. Faintness and giddiness from cerebral anæmia.

5. Visceral complications. *Lungs*—Remembering that valve lesions act backwards, you can understand that in mitral incom-

petence the lung vessels are in a chronic state of engorgement which gives rise to a hypersecretion of mucus—*i.e.*, a state of chronic catarrh. This over-pressure acts upon the walls of the vessels, which become dilated and varicose ; hence there arise œdema and hæmorrhages. This is specially the case in mitral stenosis. Repeated attacks of this kind bring about a condition of lung known as brown induration. The varicose condition of the vessels in the alveoli interferes with oxidation and aids in the deterioration of blood which the other visceral congestions favour.

The state of the Liver.—As there is *general* venous stasis, the blood which passes from the liver to the inferior vena cava is impeded in its flow and a passive congestion of the liver is the result. The organ assumes that condition to which the term ' nutmeg' is commonly applied. It is at first large, but eventually shrinks in very chronic cases to half its size, and it may, like true cirrhosis, set up an ascites. As a result of this passive congestion of the liver catarrh of the tubes is set up and jaundice is thereby produced. There was a subicteroid conjunctiva when the patient was admitted and bile pigment was found in the urine. Similarly, hæmorhoids and epistaxis are prone to occur. Further results of the chronic congestion of the liver show themselves in other branches of the portal vein, and as a consequence, congestion and chronic catarrh of the *stomach* and *intestines*, which impede digestion and assimilation. The spleen is always ready to undergo enlargement, and when the liver becomes passively congested the return of blood by the splenic vein is impeded and splenic enlargement is the result.

Kidneys.—When the mechanical effects of valvular disease extend to the general circulation, the function of the kidneys is more or less disordered. Valve diseases fill up the veins at the expense of the arteries. Lessened arterial tension is the first stage, and as a result it makes itself felt in the Malpighian tufts and scanty, dense, high-colored urine is the result. When the venous stasis becomes general a further change takes place in the urine. The arterial anæmia still keeps it scanty, but the venous stasis leads to the transudation of serum, and albuminuria is the result. Long-continued congestion leads to structural

changes—hyperplasia of connective tissue and degenerative changes in the tubules. In advanced cases uræmia is added to the patient's troubles.

Brain changes.—Coarse lesions are not found in the brain unless a detached clot plugs a vessel and gives rise to symptoms, but the brain substance generally is œdematous and the membranes are thickened. Delirium amounting to mania is an occasional symptom in the course of heart disease, and when present is of very evil import. We have had recently in our wards several cases in which maniacal symptoms appeared in the course of valvular lesions. The blood-vessels of the general circulation are frequently affected with atheroma when the left ventricle is hypertrophied, and hence the likelihood of cerebral hæmorrhages.

Treatment.—In the complication of evils present one would suppose little relief could be afforded, but fortunately we have at hand the means of alleviating a great deal of suffering. The nurse has provided him with a bed-rest, by means of which he can rest fairly comfortably. We began with free purgation with calomel. Two grains every two hours were given until the bowels acted freely. In this way good was done in various directions. The intestines were unloaded, the congestion of the gastro-intestinal mucous membrane was relieved, and as calomel is a diuretic under certain conditions, it probably reduced the dropsy as well. There was certainly much less fluid in the peritoneum after the action of the calomel. Having cleared the way, I prescribed fifteen minims of tincture of digitalis to be taken every four hours. The night before last there was very urgent dyspnœa, and Dr. Campbell succeeded in affording relief by very freely dry-cupping the back.

Postscript.—The course of the case was at first satisfactory, though the stomach was very irritable and it became expedient to suspend the administration of the digitalis. At the end of three weeks there was considerable improvement—the dyspnœa was not so urgent, the anasarca was less, more urine was passed, and he was able to sit up and move about the ward. But this happy state of affairs did not continue, for on the 15th of April, after he had been 57 days in hospital, dyspnœa set in (respira-

tions 40), and cough became troublesome. Expectoration was very copious. The temperature rose. Signs of fluid were detected at the left base, and a pint of pus was withdrawn by the aspirator. Three days later a second aspiration was performed, but now his strength seemed unequal to this new strain and he became rapidly weaker, and died upon the 21st April.

In the main the autopsy verified the diagnosis. There was chronic valvular endocarditis with hypertrophy and dilatation as had been supposed, but there existed in addition chronic adhesive pericarditis. The liver and spleen were not so large as would be expected from the physical signs. The former was of a decidedly nutmeg character. There was a localized peritonitis in the hepatic region, which probably accounted for the pain in the right hypochondrium the patient complained of when he was admitted. The left pleura was the seat of an acute fibrino-purulent pleurisy.

TWO CASES OF PHLEBOTOMY IN PNEUMONIA.

By Dr. Stanley S. Cornell, Athens, Ont.

Case I.—M. W., farmer, aged 23 years, of sanguine temperament and excellent family history, while plowing, about five o'clock in the afternoon of May 3rd, 1889, was suddenly seized with a severe chill, accompanied by a sense of weakness and by vertigo. Having remained supported against a fence for half an hour, he was conveyed home by his father. About an hour after the occurrence of the rigor I visited the patient. He was lying upon his back, with his neck well extended, and breathing rapidly. The temperature, taken in the axilla, was 104°F.; the pulse was 124, strong and full. Upon inquiry, no history of recent cough, of undue exposure, or of antecedent debility could be obtained; the symptoms having occurred with an awful suddenness that rendered the young man oblivious to all wants except his need of air.

A physical exploration of the chest revealed the evidences of normal lung-tissue over all regions except an extremely small area in the right infra-scapular division, where, upon inspiration,

the dry clicking of crepitant râles was distinctly audible. Percussion over this region failed to elicit the smallest degree of dulness.

Treatment.—Sixteen ounces of blood were withdrawn from the left median basilic vein. Immediately the respirations lessened, the pulse became soft and beat less rapidly, the systemic oppression subsided, and the skin became moist with perspiration. Five grains of sulphate of quinine, in two tablespoonfuls of milk, were directed to be given at intervals of three hours during the night.

May 4th, 9 *a.m.*—The patient has rested comfortably during the period that has elapsed since 6 P.M. last evening. Temperature 98.5°F.; pulse 84, of small volume and low tension. The skin is moist, the tongue moist and coated, the bowels moved once during the night, and the general feeling is one of improvement. Five grains of sulphate of quinine to be given every five hours. 9 *p.m.*—Temperature 99°F.; pulse 86, soft and small. A severe coughing has just resulted in the expectoration of a considerable quantity of tough, fibrinous material stained with reddish-brown streaks that impart a rusty hue. Auscultation elicits subcrepitant râles over the site yesterday occupied by the crepitant râles. A draught of milk to be given whenever desired by the patient.

May 5th, 9 *a.m.*—The patient has passed a comfortable night; sleep has been refreshing, and nourishment so eagerly sought for that liberal quantities of milk have been given every three hours. Auscultation and percussion are affirmative of complete resolution in the pulmonic area involved on the 3rd inst. Temperature 98.5F.; pulse 80, large and soft.

The patient was dismissed with a tonic of iron and quinine to be taken after meals; walked about on the 6th of May, and resumed work on the 17th.

Case II.—R. G., a farm-hand, aged 21 years, had been feeling unwell for a week. During this period he had experienced a weakness gradually overcoming him, accompanied by breathlessness upon slight exertion, and preventing his engagement in

heavy work. On June 22nd, 1889, a chilliness seized him, and was followed by fever, dyspnœa, and cough. I visited him the following day.

June 23rd, 4 p.m.—The patient lies upon a couch on his right side; his face is flushed a deep crimson; respirations 24; temperature 103.6°F.; pulse 110, small and compressible. He coughs frequently, each paroxysm lasting a considerable length of time, and being attended by the expectoration of frothy mucus containing an admixture of pus.

Physical signs.—The right lung from apex to base, anteriorly and posteriorly, is involved in the exhibition of mucous, submucous and subcrepitant râles, and some loss of resonance in the percussion note. The left lung exhibits greater volume and higher pitch in the inspiratory and expiratory murmur, and a percussion-note so much exaggerated in resonance as to be vesiculo-tympanitic. There is anorexia; the tongue is covered with a white fur which extends from tip to base; the abdomen is tympanitic and the bowels are constipated. The urine is scanty and high-colored.

Treatment.—Eight ounces of blood were abstracted from right median basilic vein. This procedure was followed by an immediate increase in the volume and tension of the pulse, by relief of dyspnœa, and by copious perspiration. Five grains of ammonium carbonate to be given every three hours until my next visit.

June 24th, 5 p.m.—Patient feels no discomfort except that which arises from frequent coughing and abundant expectoration. Temperature 101°F.; pulse 98, of large volume and firm tension.

Physical signs.—The respiratory acts are less accompanied by moist râles than yesterday, the murmurs possessing greater length, greater volume, and higher pitch. On percussion, the right side of the thorax imparts normal resonance over all portions except a small area in the infra-scapular region, where the note still manifests diminished resonance.

Treatment.—Five grains of potassium iodide every third hour. Copious draughts of milk, and meat, potatoes, toast and tea whenever wished for.

June 25th, 3 *p.m.*—Since my visit yesterday, the patient, desirous of change, walked, unaided, from the ground floor up a stair of fifteen steps, and placed himself upon a bed near an open chamber-window. He professes to feel very much invigorated by the exercise, and to derive much benefit from the fresh air of his new apartment. Were it not for the weariness induced by paroxysms of severe coughing and some difficulty experienced in urinating the patient would consider himself able to go about his usual work. But the principal factor in the causation of systemic fatigue is to be found in the anæmia so fully represented by pallor of the countenance and of the conjunctival, buccal and nasal mucous membranes. Temperature 99°F.; pulse 86, of medium volume, and soft. The physical evidences shown by the stethoscope are: râles lessened in size and number; greater volume and pitch of the respiratory murmur; normal resonance upon percussion. All these qualities pertain to the right side.

Treatment.—Quinine and mineral acid before meals. Dismissal.

This patient was heard of in two weeks as doing his work on the farm, although weakness attended him.

Retrospect Department.

QUARTERLY RETROSPECT OF OBSTETRICS.

Prepared by J. Chalmers Cameron, M.D.,
Professor of Obstetrics, McGill University; Physician-Accoucheur to the Montreal Maternity, &c.

The Value of Deep Incisions in the Cervix, Vagina and Perineum in difficult cases of Labor.—(*Archiv für Gyn.*, Bd. xxxvii, IIft. 2.)—Dührssen writes very enthusiastically of the great value of incisions in certain cases of protracted labor where delay is caused by imperfect dilatation of the external os uteri. Artificial dilatation in such cases may be indicated (1) to permit the termination of labor by the natural forces, (2) to prevent threatened cervical tearing, or (3) to make possible an immediate delivery by operative measures. He tabulates the cases in which incisions are likely to prove useful as follows:—

1. Closure of the os through atresia.
2. " " " agglutination.
3. " " " rigidity of os.
4. Imperfect dilatation from rigidity of the portio vaginalis.
5. " " " feebleness of uterine action.

He reports 10 cases in which his method was employed. Of the 10 children only 1 died of asphyxia, although several were born deeply asphyxiated. If incision had not been practised, craniotomy would have been inevitable in several of these cases, and in others the child would probably have perished from the amount of force necessary for extraction. The conclusions which Dührssen draws may be summarized as follows:

1. In the imperfectly dilated os uteri, incisions are to be made in its margin only if the supra-vaginal portion is fully dilated. Incision is indicated chiefly in primiparæ; in multiparæ only if the vaginal portion is abnormally rigid or cicatricial.

2. Multiple superficial incisions of the external os in cases of atresia or conglutination are indicated if dilatation does not take place.

3. If, on account of rigidity of the portio, the partially dilated os does not dilate any further in spite of uterine action, then chloroform should be given, and if the os still remains undilatable, superficial incisions should be made.

4. Careful antiseptic precautions remove the danger of wound-infection, even if labor is protracted.

5. Where there is urgent necessity for the immediate termination of labor in behalf of mother or child, deep incisions must be made in the cervix up to the vaginal insertion. Two or three generally suffice to open the os completely; one upon each side and perhaps a third behind. Very little blood is lost; they do not tear deeper during the progress of labor and are not liable to infection if antiseptic precautions are adopted. By these deep incisions the maternal and fœtal mortality is reduced in old primiparæ, in premature rupture of the membranes, in prolapse of the cord eclampsia or placenta prævia in primiparæ, in version followed by immediate extraction, and in flat or generally contracted pelves where turning or the high forceps operation is to be done.

6. A speculum is not necessary. Two pairs of bullet forceps keep the part to be incised steady and on the stretch. The incision is made with a pair of Siebold's scissors guided by two fingers of the left hand.

7. In primiparæ, where the presenting part still remains high, in spite of cervical incisions, one or two deep vagino-perineal incisions may be made, which dilate the lower third as well as the orifice of the vagina. The resistance of the soft parts is thereby overcome and the high forceps operation or extraction by the foot facilitated and the prognosis for mother and child improved. Such incisions are sometimes useful in kyphotic or funnel-shaped pelves. They are best made with a scalpel, when the vaginal outlet is widely stretched and the head arrested. They should be 4 cm. long and 2–3 cm. deep, and should be closed with three stitches after the conclusion of labor.

The Induction of Premature Labor.—(*Centralblatt f. Gyn.*, 26 Juli, 1890.)—*Ahlfeld* gives the results of 118 cases operated upon by himself and his assistants between the years 1871 and 1890 at Leipzig, Giessen and Marburg. Contraction of the pelvis was the chief indication for the operation (111 out 118 cases). The commonest forms of contraction were—

Generally contracted pelvis (simple)	26
" " " (rachitic)	33

Rachitic pelvis (with slight or no general contraction)	24
Simple flat pelvis	13
Anchylosed obliquely contracted pelvis	4
Double dislocation	2
Funnel pelvis	2
Osteomalacic pelvis	2
Spondylolisthetic pelvis	2
Normal (*i.e.*, relatively small)	2
Undetermined	1

The conjugata vera was on the average 7.97 cm. (3.14 inches); in 10 cases it was under 7 cm. (2.75 inches). Altogether 121 children were born (3 times twins).

Born alive	102
" dead	19
Died during first day	18
" before the 12th day	9

75 living children (62 p.c.) were discharged from hospital along with their mothers.

In the 99 cases of contracted pelvis 101 children were born (twice twins). Of these were

Born alive	86
" dead	15
Discharged alive	61—(60.39 p.c.)

In cases where the conjugata vera was under 7 cm. ($2\frac{3}{4}$ in.), of 10 children none lived.

Where the conjugata vera was 7–8.5 cm. (2.75–3.35 in.), of 57 children 38 (66.6 p.c.) lived.

Where the conjugata vera was 8.5–9.75 cm. (3.35–3.84 in.), of 25 children 21 (84 p.c.) lived.

Only one mother died from the direct effects of the operation; in her case death was attributable to bruising of the parts, from the passage of a large head through a deformed pelvis. During the puerperium 75 recovered without rise of temperature (68.8 per cent., which is the usual percentage in ordinary cases); 87 were discharged well on the twelfth day (80 per cent.).

The method which Ahlfeld considers most effectual is Krause's —that is the introduction of a flexible bougie into the uterine cavity without rupturing the membranes. The membranes should be ruptured to induce labor, only in cases where the mother's life is at stake, or where some dangerous symptom must be met by speedy evacuation of the liquor amnii; the child's chances are thereby minimised. The conclusions drawn from this interesting and valuable paper are as follows:

1. The induction of premature labor maintains its place as a means of saving the child's life in cases of contracted pelvis, notwithstanding the improvement in the results of the Cæsarian section. If in 111 cases only one mother died from the direct results of the operation, 80 per cent. made a perfectly normal recovery, and the rest had a more protracted puerperium without any serious symptoms, the result of the operation must be considered good for the mother. If, further, out of 101 children born after the induction of labor in cases of contracted pelvis 60.39 per cent. left the hospital well along with their mothers, the result of the operation is also good for the children. In contrast to these results he reports that in 6 cases of Cæsarian section in contracted pelvis done in Marburg, 2 mothers and 1 child perished.

2. Krause's method may be used in private practice, but the chances of a favorable issue are greater in a hospital.

3. Premature labor should be induced as late as possible, in the interests of the child.

4. The lowest limit of pelvic contraction in which the operation may be performed may be placed at conj. vera 7 cm. (2¾ in.).

5. The artificially induced labor should resemble normal labor as far as possible.

Dührssen's article is very timely. The brilliant results of the improved Cæsarian section have tended somewhat to divert attention from less showy but really more conservative procedures. Cæsarian section undoubtedly has its place, but that place is far more limited than some of its advocates claim. Duhrssen's results show what can be done when systematic and careful examination of patients is made early enough to diagnose pelvic contraction and in suitable cases permit the induction of premature labor. The necessity of medical men perfecting themselves in the technique of external palpation and pelvimetry becomes daily more evident.

Difficulties in Inducing Labor. (*Annales de Gynécologie*, Juillet, 1890.)—*Professor Pajot* relates the following case. In the beginning of the year a woman aged 25, of small stature, but otherwise well formed, was brought to his clinic. She had

been confined three years previously,—the child was so large that it died during delivery, and so much force had to be employed with the forceps that the pubic bones were separated a finger's-breadth at the symphisis, compelling her to remain eighteen months in bed tightly bandaged before she was well enough to get up. She was again pregnant between three and four months, and wished to bear a living child and at the same time avoid the recurrence of the difficulties experienced at her first confinement. As the conjugata vera measured about 9 cm. ($3\frac{1}{2}$ inches), it was determined to induce labor between the seventh and eighth month. On 7th June a bougie was passed into the uterus and allowed to remain for twenty-four hours; uterine action not having begun, it was removed, disinfected, and reintroduced. This failing, a sponge was passed into the uterine cavity and left there till the morning of the 11th, but without effect. The sponge, swollen to the size of a hen's egg, was withdrawn and two similar ones introduced; every three hours douches were administered. Pains set in, lasted for three hours and then disappeared. On the 12th the sponges were withdrawn, the uterus and vagina douched out, and a rubber dilator introduced, which when distended with warm water measured 6 cm. (2.36 in.) in diameter. Douches were again given every three hours. The rubber bag remained *in situ* till the morning of the 14th without exciting uterine action, and it seemed as if puncture of the membranes would have to be resorted to. One more attempt was made, and this time successfully. The rubber bag was withdrawn and two others of the same size introduced and filled, and douches given every two hours. During the night pains set in and a living child was born spontaneously on the morning of the 15th. It took $8\frac{1}{2}$ days to induce labor; in his enormous experience of 48 years Prof. Pajot had never met with a case in which the induction of labor was so difficult or tedious. He remarks that this case is one more fact to be added to the article PATIENCE in Obstetrics.

Fatal Hemorrhage from Laceration of the Vulva. (*British Medical Journal.*)—*Dr. Drzmalik* reported in the *Wiener Klin. Wochenschrift* an unusual case, which is of considerable obstetric and medico-legal interest. A woman, aged 24, in the eighth

month of her first pregnancy, was seized with sudden faintness in the hall of her house, leaned against the wall for support, but gradually slipped to the floor with thighs extended. She was picked up unconscious and bleeding, and soon expired. No trace of violence was found, but immediately above the meatus urinarius an angular laceration was discovered, the meatus lying close to the apex of the angle. The wound was the source of the fatal hemorrhage, and was caused by the sudden and extreme abduction of the thighs.

Antipyrin in Obstetrics. (*Medical News*, July 26th, 1890.) —In an editorial upon this subject the researches of M. Misrachi, published in the *Revue Générale de Clinique et de Thérapeutique*, are commented upon. M. Misrachi gave antipyrin to thirty women during labour, and found that it gave relief in nine cases. In five of these, lumbar pains were intense; in one there was tetanic contraction of the uterus; in two, excessive rigidity of the cervix; and in one, great nervous excitability. In four cases the liquor amnii had come away early, and in all the os was but slightly dilated and there had been severe pain, lasting six, seven, twelve, eighteen and seventy-two hours. In these nine cases, antipyrin relieved pain, calmed nervous excitability, and relaxed tetanic uterine contraction and rigidity of the cervix. In normal cases the drug gave no relief. Like opium and chloral, it is useless in the second stage of labor when pain is due to compression and great distention of the genital canal; then ether and chloroform are most efficient. It is evident, therefore, that antipyrin is useless in normal labor, but is of value in certain painful complications of the first stage of labor. It is indicated in tedious labor, when there is an exaggerated nervous susceptibility to pain which reflexly interferes with the efficiency of the uterine contractions, when the liquor amnii has come away prematurely, or when there is rigidity of the cervix or spasmodic contractions of the os or body of the uterus. It is, moreover, of value in the treatment of false pains, threatened abortion and after-pains. M. Misrachi mentions a case where slight hemorrhage and considerable pain occurred at the time of the usual menstrual flow in which opium and prolonged rest gave no relief, but antipyrin acted well. In cases of threatened abor-

tion, the pains promptly disappeared and gestation was not interrupted. In two cases of placenta prævia it did good service: in one, bleeding was controlled at the fourth, sixth and seventh month; in the other there was a slight hemorrhage at the sixth month and a profuse one at the end of the eighth month, with strong uterine action and dilatation of the os to the size of a silver dollar, the placenta being centrally attached. Fifteen grains of antipyrin every half hour for three doses arrested the hemorrhage and labor terminated safely in six hours. In the treatment of after-pains it succeeds in 95 per cent. of the cases, and, as M. Chauppe first pointed out, is specially useful when the after-pains are caused by ergot. M. Misrachi finds thirty grains sufficient in most cases, though forty-five grains may be administered. It is best given in divided doses every hour or half hour according to the urgency of the case. When there is a tendency to vomit, it is best given by enema (antipyrin grs. xxx, tinct. opii ♏ v, aq. ℥ iv); two or three such may be administered. Although he has used the drug in hundreds of cases he has never noted any ill effects, and thinks that cases of so-called antipyrin poisoning are due to personal idiosyncrasy. Antipyrin is not a specific for pain in obstetrical practice, but, like all other drugs, must be used with judgment and in suitable cases.

The Etiology of Septic Peritonitis. (*Annales de Gynécologie*, Janvier 1890.)—*Dr. Bumm* of Wurzbourg contributes an article on this subject, maintaining that septic peritonitis appears in the following forms:—

1—*Aseptic peritonitis.* This is the benign form, produced by mechanical, chemical and thermic irritation without the active participation of bacteria. It is characterized by a tendency to fibrinous exudations and adhesions between serous folds. It usually remains circumscribed, though it may become general if the irritation involves the whole peritoneum.

2—*Septic peritonitis.*—(*a*) Peritonitis with streptococci—habitually determined by puerperal infection, but may also depend upon the opening of septic channels in the peritoneum, or infection during operations, etc. (*b*) Putrid peritonitis—occurs after laparotomy or the perforation of the hollow organs of the abdomen.

3—*Specific inflammation of the peritoneum.* Tuberculous peritonitis is the most important variety. Is there a gonorrhœal peritonitis? It is doubtful—gonorrhœal microbes have pathogenic action only on mucous membranes and die in serous cavities. When cystic tubes burst and gonorrhœal matter escapes into the peritoneal cavity, it acts generally as an aseptic foreign body and becomes encysted. If the pus from the ruptured tube contains pyogenic as well as gonorrhœal microbes, a septic peritonitis will probably be lighted up.

Fever in Childbed. (*Amer. Jour. of Obstetrics*, Aug. 1890.) At the meetings of the London Obstetrical Society on June 4th and July 2nd, 1890, Dr. Robt. Boxall gave a resumé of the practice of the General Lying-in Hospital from July 1882 to June 1889 inclusive, with elaborate charts and tables dealing with the 2,762 cases delivered during that period of time. He claims as proven—

1—That the proportion of cases affected with fever declined rapidly, then became steady, and has since diminished slightly.

2—That this decline is mainly attributable to the decrease and temporary abolition of cases of septicæmia and pelvic inflammation.

3—That in febrile cases, the duration as well as the height of the fever have diminished.

4—That these changes are identical in point of time with certain changes effected in the hospital service.

An important point proved by Dr. Boxall is, that the decline in the general fever-rate during the past five years has been mainly due to the diminution of septicæmia, and whenever a temporary rise in the general fever rate has taken place, careful investigation has demonstrated an increase in the septic element. This has been in the main the experience of other institutions, and it is satisfactory to find it borne out by Dr. Boxall's careful researches. Another interesting point is that the fever and septic rate declined when sublimate was substituted for Condy and carbolic acid, rose when salufer replaced the sublimate, and declined again when he returned to the routine use of sublimate. It was also evident that strong solutions are more efficacious for douching purposes than weak ones, and that therefore antiseptic

are preferable to merely aseptic douches. Routine antiseptic or aseptic douching during the puerperal period is condemned. With regard to the danger of mercurial poisoning from the absorption of the stronger douche-solutions, Dr. Boxall believes that there is less danger in mercurialism than in sepsis, and that the routine use of strong antiseptic douches of corrosive sublimate must continue unless or until the manifold sources of septic infection can be traced and dealt with outside the body. Intra-uterine douching is used only when the hand or some instrument has been passed into the uterus, or where the fœtus was macerated or decomposed, or where there was retention of clots or bits of membrane. In such cases it should be used immediately after the conclusion of labor; it will then be rarely necessary to use an intra-uterine douche during the puerperium. When the discharges become foul the genital tract should be carefully examined, beginning at the vulva, and cleansed of all decomposing matters; such practice is preferable to blind indiscriminate douching. For the hands the solution of sublimate should be 1×1000; for the douche before and immediately after labor it should be 1×2000. He does not consider iodoform suppositories of any use after intra-uterine douching, nor does he consider them sufficient substitutes for irrigation. He finds absorbent cotton better for vulvar pads than wood-wool. He concludes that the gradual improvement in the statistics of the hospital has resulted partly from attention to points of general hygiene and partly from practice in dealing with the antiseptics used—that a further improvement was effected by a substitution of sublimate for other disinfectants, but that a retrogression occurred when the strength of the sublimate solution was reduced or when it was replaced by salufer.

Diphtheritic Puerperal Infection. (*Annales de Gynécologie*, Juillet 1890.)—*Péraire* reports the case of a woman, II-para, aged 28, confined at full term of a living child. On the second day came a rigor and signs of septic infection; the case grew rapidly worse, the uterus was curetted, but finally death took place on the 16th day. False membranes containing streptococci were found *post-mortem* in the vulva, vagina and uterus. The author then asks how, in the present state of our knowledge, we

should proceed to prevent the occurrence of this malignant form of puerperal septicæmia. The routine he prescribes is so minute and for ordinary cases of confinement so irrational and impossible, that it is worth while to transcribe it, if only to show to what absurd lengths even able men will sometimes ride their hobbies. He divides the precautionary measures into three classes—(1) precautions during pregnancy, (2) precautions before, during and after confinement, (3) measures to be taken when infection occurs.

1—Precautions during pregnancy. From the beginning of gestation every pregnant woman should use a warm vaginal injection of weak biniodide solution twice a day, the vulva should then be washed with soap and warm water and a tampon of absorbent, borated or salolised cotton placed over it. The vaginal douche nozzle should be kept in a glass jar filled with borated water and hermetically sealed. She should take a general bath at least twice a week, provided the water is not too warm and the bath does not last longer than twenty minutes. These precautions will prevent the woman from taking chills or having a rise of temperature, and the child from contracting purulent ophthalmia.

2—The accoucheur must thoroughly disinfect his hands and arms in the ordinary way. Before making a vaginal examination, an antiseptic douche must be given, and a complete toilet of the genital canal, external parts and perineum made with pledgets of absorbent cotton soaked in biniodide of mercury solution 1×2000. The examining finger, still wet with the disinfectant fluid, should be anointed with bichloride or carbolic acid pomade. After delivery, an antiseptic vaginal douche will be sufficient if no operative interference has been necessary. During the puerperium a very hot vaginal douche must be given twice daily and a pad of iodoform or salol cotton kept constantly applied over the vulva.

3—After confinement the patient is exposed to the various infective accidents which complicate wounds, such as traumatic fever, acute septicæmia, chronic septicæmia, and purulent infection. If symptoms of infection occur, the vaginal douching must be more frequent, intra-uterine injections must be given,

and the patient washed morning and night with borated water. Internally, quinine and tonics are indicated, while the intestine is disinfected by means of charcoal and naphthol β or charcoal and salol. If improvement does not take place in twenty-four hours, the uterus must be curetted.

Slow Desiccation and fall of the Cord. (*Annales de Gynécologie.*)—*Loviot* reported to the Obstetrical Society of Paris the case of an infant born three weeks before term, where the cord did not separate till the fifteenth day. It had been treated with borated cotton and was quite dry.

A Case of Rupture of the Uterus successfully treated with Iodoform Gauze Tampon. (*Der Frauenarzt*, Juli 1890.)—Dr. Herzfeld, one of Karl Braun's assistants in Vienna, reports a case which tends to confirm the views expressed by Leopold and Piskacek, that abdominal section should be performed in cases of ruptured uterus only under very special circumstances, and that the iodoform gauze tampon is generally safer and more effectual. The patient was a V-para, from whom the liquor amnii had come away three days previously. The child lay transversely; turning and decapitation had been tried by the attendant, but without sucess. When she entered the klinik she was much collapsed, the left shoulder was jammed in the pelvic brim, and the left hand protruded from the vulva. There was a rupture on the left side of the cervix. 3 cm. under the internal os, through which the whole hand could be passed into a cavity filled with clots. Decapitation was performed with Braun's hook and the child delivered; a discolored placenta soon came away, followed by a quantity of dark blood and clots. Strips of iodoform gauze were packed into the uterus and the cavity of the rupture and a firm compression band fitted on externally. On the evening of the sixth day the temperature was 100.2°, otherwise everything was normal. The tampon was then removed; there were several ulcerated patches in the vagina and vulva, which were brushed with tincture of iodine. The vagina was syringed with thymol-solution and the subsequent course of the puerperium was normal. The uterus involuted normally and there was no sign of exudation.

Rupture of the Uterus; Passage of the Fœtus into the Peritoneal Cavity; Recovery. (*Gazette des Hopitaux.*)—M. Gueniot reports a case treated in the Paris *Maternité*, where complete rupture of the uterus took place, the fœtus passed almost completely into the abdominal cavity, but was readily delivered per vaginam. During the manipulations necessary for extraction, the round ligament and the lower border of the liver were plainly felt. After extraction, hypodermics of ether were administered, heat applied to the general surface, and compression of the uterus maintained from above downward in order to approximate the divided parts; afterwards antiseptic vaginal injections were given, and bladders of ice applied to the abdomen. For some time the patient suffered pain at the site of the rent, the temperature went up a little, and peritonitis was threatened several times, but she eventually made a good recovery. Gueniot remarks that, provided strict antisepsis is observed, such grave injuries may be cured without operative interference even in the wards of such an old-fashioned and in many respects unsuitable building as that of *La Maternité*. From this case also we learn that abdominal section is neither the only nor the first resource in rupture of the uterus.

Treatment of Extra-uterine Pregnancy. (*Deutsche Med. Wochenschrift*, No. 8–10, 1890.)—*Olshausen* recommends immediate abdominal section in the first three months if the sac has not ruptured; but if rupture has taken place, the operation is warrantable only when the symptoms are urgent and antiseptic precautions can be ensured. In the second half of pregnancy, if the child is living, he advises immediate operation without waiting for the viability of the child. Towards the close of pregnancy he does not wait for the death of the child, but operates at once; he considers waiting for the death of the child more dangerous even than operating when the child is alive. If the child dies during the latter half of pregnancy, he advises waiting for 8–10 weeks before operating, till the placental circulation has ceased. In conclusion he reports 8 cases of operation where the fœtus was at or near full term. In 2 cases the child was living, and one of these was saved. In all the others the fœtus had been dead for some time. All the mothers re-

covered. The ovisac remained behind in 3 cases, and was sewn to the abdominal wall and packed with iodoform gauze. In 4 cases the whole placenta and ovisac were extirpated. In 2 cases the placenta was left behind; in one case it was removed artificially on the 11th day, and in the other it came away spontaneously on the 34th day. When the child lay free in the abdominal cavity, the placenta was removed along with the child. Olshausen recommends removal of the whole ovisac if possible, otherwise stitching to the abdominal wall either before or after it is emptied. He condemns elytrotomy and drainage per vaginam.

Retention of Placenta twenty-five days Post-partum without Putrefaction. (*Der Frauenarzt*, Juli 1890.)—Dr. Mensinga of Flensburg reports the following case. On 31st March his patient expelled a four-months fœtus with very little loss of blood; the placenta did not come away. The following day the patient felt well, the os was quite closed, and no bleeding. Warm creolin douches were given twice daily for four days, and then the patient insisted upon getting up and looking after her household duties. A sero-sanguinolent discharge began, and she suffered somewhat from backache; but sleep, appetite and digestion continued good. On the 25th April, while standing in the kitchen, a sudden hemorrhage came on, and she was lifted into bed blanched and unconscious. The little finger could be passed through the os. A Sims' speculum was introduced, the anterior lip steadied with forceps, and a strip of iodoform gauze packed into the uterine cavity and another into the vagina. No more bleeding occurred, and the next day the woman was placed in the knee-elbow position and the tampons removed. The placenta lay over the os and was easily extracted; it had the shape of a duck's egg and was quite free from smell. Another tampon was put in for twenty-four hours and then daily creolin injections given. The patient recovered without the slightest ill consequences. Dr. Mensinga congratulates himself upon not having had the *furor operativus*, or he might have been tempted to dilate that closely contracted os on April 1st and remove the placenta artificially; he thinks the result for the patient might have been worse. In the opinion of most careful obstetricians,

on this side of the Atlantic at least, the worthy doctor took upon himself a serious responsibility in allowing a woman with a retained placenta to get up and go about her household work. She might at any moment have had a fatal hemorrhage or developed symptoms of septicæmia. Nature is to be congratulated in this case, not the doctor. It cannot be too strictly laid down as a rule of practice, that while a placenta is retained in utero (in whole or in part), the patient is exposed to the risks of hemorrhage and septicæmia ; she should therefore be confined to bed and means taken to get the retained mass away as soon as possible. In such cases delay is dangerous.

The Use of Spirits and Malted Drinks in Nursing Women. — An interesting discussion upon this subject took place recently in the Pædiatric section of the New York Academy of Medicine. The subject was introduced by Dr. A. Jacobi in an able paper. He said that a proper understanding of the subject necessitates a consideration of the nature of the mammary secretion and the circumstances under which it may become mixed with drugs or other matters found in the circulation. Foreign matters have been found in the milk of nursing women, but the conclusions drawn therefrom by different observers have been conflicting and misleading. A knowledge of the physiology of lactation generally enables such discrepancies to be reconciled. The solids of the milk consist of transformed cells of the mammary glands, and contain a considerable quantity of potassium and phosphate of lime, a very little chloride of sodium with casein, milk-sugar and more fat than is found in the blood. Incomplete changes in the mammary epithelium produce colostrum, not milk ; and the quality of the milk depends far more upon the condition of the gland than upon any article of diet. General constitutional conditions, emotion, and the period of lactation strongly influence the character and quality of the milk ; if much deteriorated, the milk may become mixed with transuded blood-serum. This *transudation milk* may thus contain medicinal or other substances from the maternal circulation, and may convey these matters to the infant, causing serious or even fatal disturbances. Mental emotions may in a similar way produce a profound effect upon the child. During the early days of lactation, while colostrum is being secreted,

opium more readily passes over to the child than it would do later on, and thus a dose of opium given to the mother might produce an injurious effect upon the child early or late in lactation which it would not do when the milk is free and is a normal secretion. Applying these principles to the present subject, it is evident that alcohol may be taken by a mother without in any way affecting the child, provided the mammary secretion is normal; but if the milk is deteriorated, injurious effects may result. The literature of the subject is scanty. In 1853 Becquerel claimed as the result of his observations that when nurses took alcohol freely the children were sleepy, restless, and often took convulsions. Stumpf asserted that alcohol had no effect upon the milk, and that salicylate of sodium is the only drug which increases its quantity. Jacobi's experience goes to show that the salicylates do increase the quantity of milk, but that alcohol does not. Alcohol acts in the same way as the carbo-hydrates, and the effect sought to be obtained by giving alcohol may be more easily and safely secured by giving carbo-hydrates in some other form, such as milk and farinaceous foods. A woman in ordinary health requires about 90 grammes of albumin daily; a nursing woman requires about 150 grammes; the additional quantity is to be supplied by a liberal diet of meat and milk. Jacobi would forbid the use of alcohol by nursing women, unless there is definite indication for its use as a medicine.

Dr. Partridge thought that the quantity of mother's milk could be increased by the use of malted drinks, partly because of the larger amount of fluid taken and partly by the stimulation of maternal nutrition. He does not approve, however, of this "*high-pressure nursing*," as it is apt to cause functional disorders of the heart and pelvic organs, and is quite unnecessary in these days of improved infant foods. He would not take away malted drinks from one accustomed to their use. If a woman believes firmly that malt liquor or anything else is going to increase her milk, it will probably have the desired effect.

Dr. Siebert found that among the poorer classes who drink much stale beer, that unpleasant effects upon the children are common. This he attributes to bacteria, and he always forbids

beer to the mother when the child is suffering from gastro-intestinal disorders.

Dr. Grandin has always been in the habit of allowing malt liquor to nursing women who seem in need of a stimulant, and has never been able to trace any ill-effects to the child from such a practice. He thought the quality and quantity of the milk were both improved.

Dr. Jacobi, in closing the discussion, said that it seemed pretty well agreed that liquors are unnecessary and for the most part injurious to nursing women, although in some cases they may be helpful in aiding the digestion of the large quantity of carbohydrates required during the period of lactation.

The venerable superstition that nursing women need to drink ale or porter to improve their milk has received its death-blow at Dr. Jacobi's hands; and it is to be hoped that clearer ideas respecting the physiology of lactation will lead to more rational methods in the dieting and physicking of nursing women.

Hydramnion in Twin Pregnancy. (*Brit. Med. Journal.*)—Dr. Kruse of Greifswald reports a case in the *Deutsche Med. Wochenschrift*, where hydramnion occurred in a single-ovum twin pregnancy. The patient was 41 years old and had borne seven children. After a fall, the abdomen suddenly increased in size and dyspnœa set in. On admission to hospital the diagnosis was twin pregnancy at the sixth month with hydramnion of one fœtus. Krause's method having failed to induce labor, the membranes were ruptured; seven quarts of liquor amnii came away and the twins were soon expelled. None of the conditions were found which are said to cause hydramnion in single-ovum twin pregnancies. The placental and funic circulation was perfect. One fœtus was larger than the other, but there was no anæmia of the one with corresponding plethora of the other. The bladder of the bigger fœtus was much distended with urine, the ureters tortuous, and the renal pelves dilated. This was caused by mechanical obstruction to the escape of urine by pressure of the amniotic fluid. There was no obstruction in the genito-urinary tract. Hydramnion was therefore not caused by polyuria in the fœtus. The relatively small size of the other fœtus was due to

the small surface of placenta from which it derived its nourishment. The cause of the hydramnion was not determined.

Hernia of the Gravid Uterus. (*Archiv für Gyn.*, Bd. xxxvii, Hft. 2.)—Dr. Sparling, one of Professor Leopold's assistants in Dresden, gives the notes of a rare and interesting case. The patient, æt. 30, III-para, of slight build, entered the klinik on April 2nd, 1889, stating that the liquor amnii had come away on 30th March, and that pains had begun the following day. In the middle line, below the umbilicus, was a hernial protrusion of the pregnant uterus, which fell forward and completely covered the genitals when the patient stood erect. During the uterine contractions, the round ligaments and fallopian tubes could be distinctly seen through the thin covering of the abdominal integument. The diagnosis was a living child about the beginning of the seventh month presenting in the first position of the vertex. Labor was tedious, and terminated early in the morning of the 6th April. The child was living, but very weak, and died twenty hours after birth. The hernia took place through the cicatrix of a Cæsarian operation performed six years previously. Turning had failed to effect delivery, and during the manipulations the child's head had been torn from the body ; the section operation was then performed. After a ten weeks' puerperium the patient recovered. The pelvis was contracted, the conj. vera being 6.75 cm. (2.66 in.).

Hemorrhage in an Infant caused by Ergot taken by the Mother. (*Amer. Jour. of Obstetrics*, Aug. 1890.)—Dr. B. McE. Emmet narrated a case before the New York Obstetrical Society in which ergot was given for several days to a puerperal woman for recurrent hemorrhages, when it was noticed that the child hiccoughed and showed signs of dislike when put to the breast. On the third day spots of blood were noticed on its dress and about its lips and face, while its motions were black and tarry. These symptoms ceased when the ergot was stopped. The blood was not vomited, and examination failed to discover any bleeding point ; the blood seemed rather to well up into the mouth. There was no blood in the urine.

The Use of Forceps in Breech Cases. (*Archiv für Gyn.*, Bd. xxxvii, Hft. 2.)—*Dr. Fürst* of Graz strongly recommends

the use of forceps in delayed breech cases, in preference to the fillet or blunt hook. The forceps should have a large cephalic curve, and the points of the blades should come close together. Traction should be made only during the pains, and then the force of uterine contraction and the pressure of the soft parts will tend to prevent slipping of the blades. The instrument is used therefore simply to supplement an inefficient driving force.

Graves' Disease in Pregnancy. (*Brit. Med. Journal*)—Dr. Häberlin of Zurich described the following interesting case in the *Centralblatt für Gynäkologie.* The patient, aged 36, VII-para, became pregnant in August 1889. Strange nervous symptoms developed, such as emaciation, shakiness of the hands, palpitation and constriction about the throat. She spent the summer at the seaside and these symptoms almost disappeared, but exophthalmos, swelling of the thyroid and vomiting took their place. At the eighth month the fœtus died, a hemorrhage occurred from partial detachment of the placenta, and labor terminated March 9th, 1890. After delivery the exophthalmos rapidly declined and the patient was able to close her eyelids completely during sleep on 14th March. By April 15th the signs of goitre had almost disappeared. Conception was no doubt the cause of the Graves' disease, and it in turn caused the death of the fœtus. This case is very similar to one described by Benicke, where detachment of the placenta normally attached to the uterus occurred in the thirty-sixth week of pregnancy. In the case which was under treatment in the Montreal Maternity, the heart affection was more marked and eventually caused the patient's death. The fœtus died in utero, but there was no detachment of the placenta.

QUARTERLY RETROSPECT OF SURGERY.

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Flat-foot and its Treatment.

The proper method of treating flat-foot is still a vexed question. Some surgeons always treat it by means of mechanical appliances, whilst others say that quite as much good can be accomplished by means of massage, exercises, and avoidance of certain pernicious habits, such as walking with the toes out, etc. Within the past few years the tendency has been to operative measures for the cure of all deformities; hence a school has arisen where flat-foot is treated by excision of bone, osteotomy, incision of soft parts, etc. Many report a series of cases treated by operative measures with good results. No doubt the cases of flat-foot that come under the notice of hospital surgeons are those of the more severe kind, where there is actual displacement or dislocation of the bones and hence most serious deformity, and this deformity is quite irreducible except by some operative procedure. In cases seen in ordinary out-door or dispensary practice, the patient comes complaining of pain on standing, and if there is any deformity whilst in the erect position, it disappears when the foot is lifted from the ground. In these cases operative measures could not be advised, but rather some form of mechanical appliance or the building up of the inner side of the boot, so as to throw the foot out after the plan of Thomas. No doubt in many cases the arch of the foot is ill-formed and low. This is a congenital defect which predisposes to those severer forms which give rise to symptoms.

There are several theories regarding the cause of flat-foot; some hold that under increased weight, especially during the time of growth, the strain falls upon the os calcis at a point internal to its base, and thus tends to roll it over to the inside and favors a displacement of the astragalus downwards and inwards. Normal muscles and ligaments always tend to prevent this, and at first the displacement is only when the foot rests on the ground and is therefore temporary; at last the muscles get tired out,

the ligaments become stretched, and the temporary displacement becomes a permanent one. Humphry of Cambridge is a strong supporter of this theory, laying the blame chiefly on the calcaneo-scaphoid ligament, which ordinarily supports the astragalus.

Von Meyer (*Centralblatt f. Chirurgie*, No. 18, p. 284, 1883), who made a number of examinations on the dead subject, came to the conclusion that the inferior calcaneo-scaphoid ligament is not stretched, and the arch of the foot not flattened. He attributes the deformity to an inward displacement of the arch and with it of the whole foot, due to an exaggerated rotation of the astragalus. He attributes these conditions to an increase of weight, faulty attitudes in standing and walking, turning out of the toes and the wearing of improper shoes.

In most cases of flat-foot there is a congenital predisposition. I have made frozen sections of flat-foot which plainly show this. In many cases of well-marked flat-foot there is no stretching of the ligaments at all, the bones being as closely applied as possible and the inferior calcaneo-scaphoid ligament being perfectly normal, but on examining a longitudinal section of the foot it is seen that the os calcis is not so upright as it should be—that is, the posterior pillar of the arch is more oblique. This throws the astragalus forwards and inwards and the anterior portion downwards. If this condition be exaggerated, a well-marked form of flat-foot is produced. This flatness of the arch of the foot is merely a reversion to a lower and more primitive type, and is common to all the primates and plantigrades.

The Rational Treatment of Flatfoot.—Dr. R. Whitman (*N.Y. Med. Jour.*, May 17th, 1890) says in spite of all that has been written on this subject, less is known of flatfoot, its diagnosis, causes, results and proper treatment than of any affection of corresponding frequency and importance in surgery. Dr. Whitman looks upon clubfoot as an acquired partial dislocation of the bones of the foot and nothing else; muscular spasm, lax ligaments, inflammation, etc, follow, but do not cause flatfoot. The dislocation is the result of an over-strain or weight, aggravated, it may be, by injury or disease. Mechanical disadvantages in standing or walking which predispose are (1)

exaggerated turning out of toes and (2) improper shoes. Treatment is (1) to replace the dislocation, (2) to hold the foot in proper position, (3) to strengthen the supporting muscles, and (4) to avoid the original exciting cause by cultivating a proper walk. After speaking of the diagnosis, the author goes on to consider treatment. Cases may be divided roughly into two classes. (1) Where the foot can be easily replaced in normal position; (2) where it can not. He speaks of Thomas' plan of building up the inner side of the shoe as a good one, particularly in weak ankle cases, as it tends to throw the weight of the body on the outer side of the foot. Gymnastic exercises and proper shoes may suffice in some cases, but in the majority something more is needed, and his plan is as follows. First, the dislocation should be reduced by manipulation if possible; if not, under ether. When in proper position the foot should be retained in that way by plaster-of-Paris bandages until the spasm and congestion have disappeared, and then the foot must be retained in this position. A plaster cast should first be taken of the replaced foot, and from this an iron pattern is made, and on this a brace of thin, tempered, unyielding steel is moulded. This brace accurately fits the foot and can be placed in the boot, and tends always not only to support the foot, but to throw the weight on the outer side.

I had the pleasure a short time ago of seeing this brace at the New York Hospital for Ruptured and Crippled, and was much struck with its simplicity and usefulness. Dr. Whitman insists on the patients walking properly, not turning out their toes, but keeping them directly in front of the body and thus "walking over them," thus necessitating muscular flexion of the foot, which is the best possible exercise. Flatfoot is a troublesome affection to treat, and in children leads to other serious results, as knock knee, etc.

Dr. T. S. Ellis (*Edinburgh Medical Journal*, January, 1890) describes a rational method of treating flat-foot without the use of mechanical appliances. The chief principles are: (1) To make the patient vigorously spring on tip-toe, both as a special exercise and in walking; this raises the arch of the foot and relieves strain on ligaments. (2) Avoidance of prolonged stand-

ing, low-heels, flat soles, not too thick, and no springs or supports to the arch, giving free play to inward movement of great toe. (3) Never turning out toes in walking and avoidance of fatigue.

Removal of an Ingrowing Toe-nail for Relief of Flat-foot.—Dr. V. P. Gibney, in an article entitled *A Contribution to the Study of Flat-foot*, states that he is indebted to his friend Dr. R. Abbé of New York for the suggestion which he carried out in the following case. A gentleman consulted him who had been suffering for two and a half years with an annoying pain in the sole of his foot, which pain he thought had followed an attack of subacute rheumatism. A point of tenderness was found over the scaphoid, near its junction with the first cuneiform bone. The arch of the foot could be easily restored by manipulation, and some relief was felt. He had his shoe built up after the method of Thomas of Liverpool, and used various kinds of splints, without permanent benefit. One evening he came in great distress complaining of a painful ingrowing toe-nail on the same foot. The toe was found to be much inflamed. He had suffered from this ingrowing toe-nail for two years. The toe-nail and the painful granulations were removed, and the wound soon healed. Six months after he reported that he had neither an ache or pain since the operation—the painful flat-foot was cured. Dr. Gibney adds two cases furnished him by Dr. Abbe, where the intractable pain of flat-foot was permanently relieved by operation for relief of ingrowing toe-nail.

Dr. Willy Meyer, in an interesting article on *The Treatment of Flat-foot by Supra-malleolar Osteotomy*, says that non-operative measures should be tried in all cases of flat-foot where the deformity is still reducible by manipulation; but in more advanced cases, where the deformity has become rigid, where the astragalus has slipped forward, downward and inward from the os calcis, and the scaphoid also has been displaced downward, where the shape of the bone has been permanently changed, non-operative treatment will take a long time to cure, and even the ultimate result will be doubtful; and for such cases he strongly advocates operative measures, and preferably osteotomy of the tibia and fibula just above the ankle joint. This operation was

introduced by Trendelenburg of Bonn at the meeting of the German Surgical Society at Berlin in April 1889, and he called it "supra-malleolar osteotomy." He had seen good results follow this operation in correcting traumatic talipes valgus, a position the result of a neglected and unreduced Potts' fracture, and so it occurred to him to try the same means for idiopathic flat-foot. The cause of the pain in flat-foot is due to the displacement of the line of gravity by the alteration of the longitudinal axis of the leg. The foot being in this abnormal position the tarsal ligaments are stretched and the foot everted, the internal malleolus markedly prominent. Walking and standing tend to increase this deformity and the pain also. Now if the tibia and fibula are cut across with a chisel immediately above the malleoli the deformity can be corrected and the foot so placed as to transmit the weight of the body through the tarsus in an oblique direction—that is through the cuboid instead of the scaphoid bone. Trendelenburg performed supra-malleolar osteotomy seven times in five patients between the ages of 16 and 40, and was astonished to see the remarkable result. The arch was restored and the displacement of the leg and foot at once removed; the difficulty and pain in walking or standing had fully or nearly disappeared. At the same meeting, Hahn of Berlin stated that he also operated on flat-foot by osteotomy, but of the tibia only, and deemed it very important to cut the bone immediately above the malleolus. He had operated five times in three patients. One patient was cured, the second improved; in the third the operation rather aggravated the trouble. Hahn proposed to add Ogston's operation to osteotomy and reduction in extreme cases.

Dr. Meyer has operated on two male patients with the best results; one was aged 24, the other 20; both were exhibited to the New York Surgical Society in March, 1890. He followed the rules laid down by Trendelenburg (*Archiv f. Klin. Chirurgie*, Bd. xxxix., Hft. 4). An incision half an inch long is made down to the fibula, about two inches above the tip of the malleolus, the foot, placed on a sand-bag, being turned inwards by an assistant. The chisel is introduced at an angle of 90° and the bone cut across. The wound is covered with an antiseptic

sponge and then the leg is turned on its outer side and the same operation is performed on the tibia at the same distance above the malleolus. Macewen's large steel chisels are used. The bones, after chiselling, having been broken forcibly, the foot is turned inwards and fixed in that position by a plaster-of-Paris splint, which is continued up to the middle of the thigh. The knee-joint is flexed at an angle of 145° in order to relax the gastrocnemii. The foot should be put up in rather an over-corrected position. The first dressing in Dr. Meyer's cases was made on the thirty-fifth day; the wound was found healed and the bones firmly united. In one of these cases the foot was over-corrected, and Dr. Meyer advises that about the tenth or twelfth day the splint should be removed and the position of the foot re-examined, and if necessary, corrected. The patient is able to go about in five or six weeks.

In June last I performed a similar operation on the right leg of a boy aged 20, who suffered from flat-foot. The case was an extreme one, with dislocation of the astragalus and scaphoid which could not be reduced. The boy had been unable to continue his work owing to the condition of his feet. The left foot was the subject of valgus, but of a much less pronounced type, so I only operated on the right. The operation I found to be a simple one, and although the arch was not completely restored on section of the bones, as has been stated, still it was much improved. The foot and leg were put up in plaster-of-Paris in the inverted position and left up for four weeks. When the splint was removed the bones were found firmly united and the wounds healed; but although the shape of the foot was improved, still there was some valgus remaining. This may have been partly due to not having sufficiently corrected the deformity, but I did not want to overdo it. However, the boy can now walk comfortably and without pain. He is quite satisfied with the result. He is employed as one of the hospital porters. I intend to continue this plan of treatment, which is, however, only suitable for severe cases and as a substitute for Ogston's operation.

Ogston of Aberdeen (*Lancet*, Jan. 26th, 1884) devised an operation for the cure of flat-foot based on the idea that flat-foot was caused by the relaxation of all the articulations of the foot,

especially that between the scaphoid and os calcis, which led to the alteration of the bones concerned in Chopart's joint. So the cartilaginous surfaces of the astragalo-scaphoid articulations were chiselled off, and after restoring the bones to their proper position they were kept in place with ivory pegs. Ogston has operated on some fifty cases with very encouraging results, patients being able to walk in three months.

Weinlechner of Vienna (*Wiener Med. Blätter*, 1888) excised the astragalus for the radical cure of flat-foot. Modifications of Ogston's operation have also been devised by Sir W. Stokes of Dublin (*Annals of Surgery*, Oct. 1885), Hare of Philadelphia (*Lancet*, Nov. 9, 1889), and others. Phelps of New York has also performed an operation "which consists of making an incision across the sole of the foot, and through this incision the muscles and fascia are hooked up, cut apart, shortened, and again stitched, the object of the operation being to shorten the girders which hold up the arch."—(*Transactions of the American Orthopædic Association*, vol. i, 1889.)

Surgery of the Spine.

At a meeting of the New York Academy of Medicine, held May 15, 1890, Dr. Robert Abbé read a paper on *Spinal Surgery with a Report of Eight Cases* (*N. Y. Med. Record*, July 26th. 1890). In these cases the posterior laminæ were removed and the cord exposed. Three were cases of paraplegia from fracture, one early curetting of a vertebra for Potts' disease, two of tumors of the vertebral canal with paraplegia, and two of intradural section of some of the posterior roots of the brachial plexus for neuralgia. In the first case, a woman aged 27, there was fracture of the spine between the 11th and 12th dorsal vertebra, followed by paraplegia. The operation was undertaken eleven months afterwards, and the intradural adhesions were broken up and the dura sutured. A year afterwards there was no relief of the paralysis. The second case, a merchant aged 27, was also done for paraplegia due to fracture below the 11th dorsal, which had lasted 2½ years. This patient died thirty hours after the operation. In the third case, a coachman aged 27, operation was performed two months after the accident for paraplegia

due to fracture of the 11th dorsal. The patient recovered, but remained unimproved. In all these cases the spinal column was cut down upon, the muscles cleared away on one side only and drawn outwards by retractors, and after cutting the ligaments, the arches of the vertebra concerned were cut through with strong cutting pliers and the space enlarged with rongeur forceps and lifted up but not separated from the muscles. After the termination of the operation the dura was sutured and the spines replaced and sutured with catgut to those above and below. The fourth case was one of Potts' disease in a glass-worker aged 20, with sinuses over the crest of the ilium leading to the 12th dorsal spine. An incision was made along this vertebra and the transverse process found carious and removed; the body of the vertebra was found softened and diseased, and was curetted away until hard bone was reached. The sinuses were also scraped out. In six weeks the patient was sent from the hospital with only a slight discharge and with but one sinus. The fifth case was that of a patient, aged 22, suffering from extra-dural tubercular tumor of the spine. There was complete paraplegia. In May 1888 Dr. Abbé operated, removing the spines and arches of the 8th, 9th and 10th dorsal vertebra; outside the carious arch of the 9th was half an ounce of thick pus, but within, filling the canal, was a small quantity of inspissated pus and a large amount of dense neoplasm, evidently tubercular, and compressing the cord. This was scraped away, the wound stuffed with iodoform gauze, and a plaster jacket applied. In three months he walked with crutches; in eight he became robust and walked well. He remained in perfect health for two years, but latterly a mass has appeared over site of the old scar which has a very tubercular appearance. In the sixth case there was paraplegia caused by an extra dural sarcoma in a man aged 42. The symptoms had lasted eight months when he operated. The arches of the 8th, 9th and 10th dorsal vertebræ were resected, the tumor reached and removed, but the patient died on the ninth day from symptoms referable to the stomach. No post-mortem was allowed. The two last cases, seven and eight, were performed for intractable brachial neuralgia. In one case the nerves were stretched, the arm amputated, and finally intra-

dural division of the 6th, 7th and 8th cervical and 1st dorsal nerves was performed. For a time the pain was relieved, but it has since returned. In the other case of intractable neuralgia the posterior roots of the 6th, 7th and 8th cervical and 1st dorsal nerves were resected. The case was somewhat improved, and morphia was given up; subsequently the pain returned, but not so severely.

In the discussion which followed the reading of the paper, Dr. Wyeth gave the histories of two cases of fracture of the spine in which he had operated. In the first the fracture was situated at the 12th dorsal. At the seat of injury the cord was found to be somewhat flattened, and there was considerable inflammatory lymph binding the cord very firmly down to the dura mater. The patient had been paralyzed for two years, and there was complete recovery. In the second case the operation was performed seventeen days after the injury, and there was immediate improvement in sensation, but paralysis of motion still remained. Dr. Gerster reported a case of vertebral tuberculosis of long standing operated on for rapidly increasing paraplegia. The laminæ of the 6th and 7th dorsal vertebræ were removed, and an extensive extra and sub-dural abscess evacuated. There was considerable caseation of the soft tissues and the transverse processes of the 5th, 6th, 7th and 8th dorsal vertebræ on the right, and the 5th, 6th and 7th on the left, were found carious and removed with the heads of the respective ribs; the bodies of the 6th and 7th dorsal vertebræ were gouged away. The operation was well borne, but no immediate improvement of the paralytic symptoms was observed until the following August (four months after). In December the patient was discharged with a small sinus on the dorsum and in good health. Dr. Morris reported a case of bullet wound of the spinal column successfully treated by excision of depressed bone. Dr. B. Sachs deprecated operations on the spine for the relief of neuralgia, and said no improvement whatever was to be expected from them.

At the congress of German Surgeons, held in Berlin in April 1890, Prof. Kraske of Freiburg read a paper on *Trephining the Spinal Column for Paralysis due to Potts' Disease.* He stated that he had four times performed the operation, and had come

to the following conclusions (*La Semaine Médicale*, April 23rd, 1890, and *Centralblatt f. Chirurgie*, No. 25, 1890) : That it is not possible to remove in this way all the tuberculous disease, and that it is only possible to relieve the disease ; the operation, like tracheotomy for croup, is simply palliative—it will not cure. The resection of the vertebral arches may lead to further deformity and produce a paralysis which was not there before. He says the operation is not without difficulties. He places the patient on one side and removes the vertebral arch of the same side, and after the hemorrhage has ceased he does the same on the other side. The spinal canal is laid open by cutting pliers, and after one arch has been cut the others, by placing one blade of the pliers in the canal, are easily cut through ; he curettes the diseased tissues. He has never yet in these cases opened the dura mater, all the disease being extra meningeal in the four cases ; and in all, the wound was stuffed with gauze and not sutured. The indications for the operation are when there is a primary focus of tuberculosis in the vertebral arch ; in such cases a radical operation may be undertaken, but these cases are rare. When the body of the vertebra is diseased one can rarely operate successfully. He does not advise a too hasty resort to operation in cases of paralysis from Potts' disease, and he only interfered when there was a paralysis of the bladder. All other methods of treatment should be tried before resorting to operation. In the discussion which followed, Israel and Bergmann of Berlin spoke rather disparagingly of operations in cases of Potts' disease.

Mr. W. A. Lane reports a case (*Lancet*, July 5th, 1890) of *Angular Curvature with rapidly developing Paraplegia*, in which he removed the laminæ and spinous processes of the 9th, 10th and 11th dorsal vertebræ with bone forceps. A large mass of granulation tissue was found and removed. Improvement took place quickly, and at time of writing, a month after, he had good sensation and could move his legs freely.

In the June number of this JOURNAL (vol. xviii, p. 911), Dr. Jas. Bell reports two cases of fracture of the 6th cervical vertebra followed by complete paraplegia, motor and sensory, in which he cut down and removed the laminæ of the 5th and 6th cervical. In both cases the cord was much disorganized, and

the operation, although well recovered from, was of no material benefit. Both patients died at the end of three days. Dr. Bell is now engaged in making experiments on dogs with the purpose of finding out if it is possible to reunite the divided ends of the spinal cord. In cases of fracture of the spine, it appears to me that the results of surgical interference will never be brilliant; the amount of injury to the cord which takes place at the time of the accident will of necessity render operative procedure of but little avail. The mere removal of fractured portions of vertebræ pressing on the cord will not restore its functions. Our only hope in such cases will be the possibility of uniting the divided ends of the cord; but even here, after the accident, ascending and descending myelitis might render even union of the divided ends of but little service in prolonging the life of the patient.

The Radical Cure of Hernia.

At the meeting of the American Surgical Association, held in Washington in May last, Dr. W. T. Bull of New York read a paper on the above subject, giving the results of 154 operations (*Medical News*, July 5th, 1890, and *N. Y. Medical Record*, May 31st, 1890). The most essential feature of the operation was the ligature of the sac at the highest possible point. The cases he divided into four series: (1) In 40 cases the sac was isolated and ligated with catgut. The portion below the ligature, when small, was dissected out; when large, or when it contained the testicle, it was drained, the wound sutured, and a drain left in several days. (2) 39 cases treated by ligature of the sac, as before, but catgut sutures were applied to the pillars of the external canal and to the divided aponeuroses. (3) 39 cases treated by ligature of sac as before. The anterior wall of the canal was only divided when it was impossible to reach the neck of the sac in any other way; the canal was sutured with two layers of sutures. (4) 16 cases in children between the ages of 4 and 14 years of age. Of the total number, the hernia was reducible in 77, irreducible in 42, strangulated in 15; all cases in series 4 were reducible. There were 3 deaths in 134 cases—one, an old man 80 years of age, from shock, one a case of strangulated hernia, and the third a man aged 26, where a large

amount of omentum was tied off, and who died from septic peritonitis. In 4 cases the intestine was opened in separating adhesions; the wounds were at once sutured and no bad results followed. By all the methods a number of cases relapsed; many were traced, and it was found that a large number relapsed, some 60 per cent.

Surgery of the Kidney.

Nephrorrhaphy.—Dr. W. Keen, at the above-mentioned meeting of the American Surgical Association, read a paper on *Nephrorrhaphy*. He stated it was always congenital, and more common than was thought. He had collected 128 cases of operations for the fixation of these kidneys, including 4 operated on by himself. Amongst these 128 operations there were 4 deaths. The methods of fixation are—(1) By passing stitches through the fatty envelope of the kidney. (2) By stitching through the fibrous capsule of the kidney. (3) By passing stitches through the parenchyma of the kidney. (4) Splitting and stripping back the capsule to obtain cicatricial union between the raw kidney substance and the surrounding tissues. The author favors the third method of operation. Silk sutures should be used and the external wound should not be sutured as it closes quickly. The patient should be kept in bed for a month, and when she begins to go about a well-fitting elastic bandage should be worn.

Renal Calculus with an unusual nucleus.—Dr. Kendal Franks (*Brit. Med. Jour.*, July 5th, 1890) reports a case of renal calculus removed from a man aged 22, with a common sewing needle as a nucleus. How it got there he was unable to say; there is a history of his having swallowed a needle when a little boy.

After History of Cases of Nephrectomy—Dr. Mott records the case of a patient who was admitted into the hospital with severe vomiting, pain and feverishness; he was deeply jaundiced. Urine was passed in considerable quantity tinged with bile, and as there was a difference of opinion as to the cause of the symptoms, operation was not resorted to. Nine years before his left kidney was removed by Mr. Barwell for calculous pyelitis. The patient died about ten days after admission, and at the autopsy a stone was found in the ureter one and

a half inches beyond the pelvis. The right kidney was enormously enlarged and weighed 1 lb. 5 oz. There was no evidence of obstruction of the bile ducts, the non-obstructive jaundice being the result of the impacted calculus.

In the *N.Y. Med. Record* for August 2nd, 1890, a case is reported by myself of the after history of a case of nephrectomy. I removed the left kidney from a woman aged 24, in 1885, for calculous pyelitis. She remained well for three years, when pus began to appear in the urine, accompanied by pain in right side. Exploration was advised and declined. She was fairly well notwithstanding that at times she passed large quantities of pus in the urine. In April 1890 she was confined of her third child since the operation; from this time she rapidly sank, and only lived a few days after admission to hospital, passing but 4–10 ounces of urine in the twenty-four hours. At the autopsy the right kidney was found greatly enlarged, the upper half converted into a series of suppurating sacs, whose outlet was blocked by a calculus weighing 150 grains. Several small calculi were found in the sacculi.

Excision of Kidney for Hæmaturia.—Dr. W. D. Hamilton, in an article entitled "*A Report of Seven Operations on the Kidney*" (*N.Y. Med. Jour.*, Aug. 16, 1890), mentions a case in which he diagnosed renal calculus on account of numerous attacks of renal colic and hæmaturia. On cutting down, no renal calculus could be discovered, so the wound was closed and patient rapidly recovered. In a short time, however, the pain and hæmaturia returned, so a second operation was undertaken. The kidney was incised and still no stone found, so it was removed, and on examination no reason could be found for the bleeding, the organ appeared to be perfectly healthy, and no calculus could be discovered. The patient recovered from the operation and has been well ever since. The author states, as a justification of the operation, the fact that the young woman, who had been a confirmed invalid for three years, is now restored to health and usefulness.

In the same *N.Y. Med. Journal* Dr. F. Tilden Brown reports a *Case of Severe Hæmaturia treated by Nephrectomy.* In this case the patient, a married lady aged 26, had several very severe

attacks of hæmaturia with excessive pain, and produced by sudden exertion. The urine also contained pus. Renal calculus was diagnosed, and Dr. McBurney cut down on the kidney, explored it thoroughly, but could not discover anything wrong. He at once proceeded to excise the organ. The patient recovered and was completely relieved of her symptoms. The kidney was examined by Dr. Delafield, who found the mucous membrane of the pelvis considerably thickened and its free surface somewhat roughened. There was also a growth of small-celled tissue beneath the epithelium, which in places formed small papillæ. There existed evidently a chronic pyelitis, and from the mucous membrane thus altered he thought much bleeding might come. He thought this had originally been produced by a calculus which had escaped in the blood-clots. These cases are most puzzling, and one is quite justified in cutting down on the kidney when there is pain and pus and blood in the urine. I cut down in such a case some three months since, carefully explored the kidney with sound, and incised the organ and explored carefully with the finger but found nothing. The patient recovered from the operation and is now well, has no pain, and no pus or blood in the urine. Before the operation the patient was unable to move about on account of the severe pain and the hæmaturia which took place on the slightest exertion.

General Surgery.

Sterilization of Catgut.—Dr. Geo. R. Fowler (*N. Y. Med. Record*, Aug. 16th, 1890) states that catgut may be perfectly sterilized by boiling in strong alcohol for one hour; it is not in anyway deteriorated by this process. The catgut is wound on ordinary small wooden spools which have been previously boiled in a solution of soda. One pint of alcohol is sufficient for sterilizing fifty metres of catgut.

At the recent meeting of the International Congress held at Berlin, Prof. Billroth read a paper on resection of the stomach and intestines; 140 cases were recorded which had come under his own observation. Twenty cases of pyloric resection had been operated on by himself, half of which died from the operation itself. All were the subject of cancer. Where much in-

filtration existed operation was almost impossible. Of those who had survived the operation four or five had lived in comparative comfort for a few months. Two cases had survived for one year to one year and a half, one case had survived two years, and one was alive five years after operation. Twenty cases of gastro-enterostomy were reported; they had all been attended by temporary success. On eight or ten occasions the cæcum had been removed, but the operation, which was always difficult, did not yield satisfactory results.

The Treatment of Pyloric Carcinoma.—Mr. F. B. Jessett reports two cases of gastro-enterostomy for pyloric carcinoma (*Lancet*, July 12th, 1890), in which Senn's bone-plates were used. One patient, aged 61, died from exhaustion five days after the operation; the other patient recovered. Mr. Jessett has now records of seven cases operated on in this way, and none died from the operation—that is, although two died, yet the operation was a success, as there was perfect union between the stomach and intestines in both cases. These cases he believes would have recovered had they been fed earlier. Mr. Jessett dwells on the importance of uniting the jejunum to the posterior wall of the stomach instead of the anterior; he thinks this avoids all risk of kinking of the intestine.

Mr. H. G. Rawdon, of the Royal Southern Hospital, Liverpool (*Hosp. Mirror of Lancet*, April 12th, 1890), reports a successful case of pylorectomy for carcinoma. The stomach was sewed up all but one inch, and the duodenum was similarly treated; then Senn's plates were introduced and the parts brought together. The patient, a man aged 55, made a good recovery. He was supported by nutrient enemata for the first six days.

Dr. W. T. Bull last April, at the New York Hospital, excised the greater portion of the stomach for carcinoma. The cut ends of the stomach and duodenum were sewed up, the edges being inverted and a Lembert's suture employed; then the jejunum was joined to the stomach by a separate operation as a gastro-enterostomy by Abbé's rings. The patient, a woman aged about 30, recovered rapidly, and when last heard of was quite well.

Expectant Treatment versus Laparotomy for Gunshot Wounds of the Abdomen.—Dr. R. W. Keene of Versailles, Kentucky,

reports three cases of gunshot wound of the abdomen (*N. Y. Med. Record*, July 19th, 1890) successfully treated without operation. Case I, a youth aged 20, was shot with a 31-calibre pistol-ball on June 26th, 1888, immediately below the umbilicus. When seen next day there was considerable pain, some vomiting, and tympanites, but no shock; later, vomiting became very severe, but the bowels moved freely, and patient, under hypodermic injections of morphia, went on well, and was about in two weeks. Case II, a boy aged 11, was shot with a 32-calibre pistol-ball $2\frac{1}{2}$ inches below and 1 inch to the left of the umbilicus, on Aug. 3rd, 1888. There was no shock, but much pain and some tympanites. Morphia was administered on August 6th; the temperature was 102°, pulse 112, and some tympanites. A saline purge and an enema were given, which freely moved the bowels. From that time patient recovered without a bad symptom. Case III, a youth aged 19, was shot with a 22-calibre pistol-ball on June 3rd, 1890, one inch to left of umbilicus; no shock. Next day, temperature 100°, pulse 62; no vomiting or tympanites. Was going about as usual at the end of fifteen days. In these cases there was no indication of immediate necessity for operative interference. Dr. Keene did well in treating them expectantly.

Surgical Treatment of Tumors of the Bladder.—In a paper on the above subject, Dr. P. S. Conner of Cincinnati (*Annals of Surgery*, July 1890) comes to the following conclusions:—(1) Only after operation is there much chance for recovery from any kind of vesical tumor. (2) That an operation should be done in all except the least and most severe cases. (3) That, as a rule, in males the bladder should be opened above the pubes. (4) That the removal should be made as complete as the situation and extent of the growth will permit. Appended is a table of published operations on the bladder, 68 in women and 133 in men, with a death-rate of 28.3 per cent. by the perineal operation and 29.4 per cent. by the supra-pubic.

A Simple Method of Fastening in situ an Elastic Catheter after Perineal Section.—Dr. Lauenstein of Hamburg (*Centralblatt f. Chirurgie*) says that for the purpose of fixing an elastic

catheter in the urethra during the first few days following perineal section for deep urethral stricture, he employs the following method: A silk thread is tied around the catheter at a point opposite the wound in the urethra, leaving both ends of the thread sufficiently long to allow their being passed out of the perineal wound when the catheter is passed into the bladder. The wound itself is then packed with iodoform gauze, the free ends of the threads being finally tied over the latter; this serves the double purpose of fixing the catheter *in situ* and retaining in place the wound dressing of iodoform gauze. In a case reported, the first redressing occurred in six days, and the catheter was retained for twelve days. Healing *per primam* of the urethral wound took place, except at the points where the threads passed out. The perineal wound had entirely closed at the end of six weeks.—(*Quoted in Annals of Surgery*, July, 1890.)

Resection of the Liver and the Regeneration of this Organ.—At the recent Congress of German Surgeons held in Berlin, Dr. Ponfick of Breslau reported some experiments he had made on the liver in rabbits. He chose the rabbit because the liver was strongly developed. He did not excise portions of liver with the thermo-cautery, but with catgut ligatures. If a quarter of the liver was excised, the animal stood the operation well; but if half the organ was removed, the animal, for the first few hours, lost its appetite, became feebler, but by degrees it recovered, and the greater number survived for some months; 100 rabbits were experimented on. If three-quarters of the liver were removed the disturbance produced was still greater; 12 rabbits survived this operation. Dr. Ponfick does not believe that the removal of more than three-quarters of the liver is compatible with life. The most remarkable fact noticed in connection with these experiments was the rapid regeneration of the liver, and that the amount of regeneration exceeded the quantity of liver removed. In a case where he removed three-quarters of the liver in a rabbit the whole right lobe was regenerated and increased in volume; it presented an irregular surface. This reproduction is very rapid. In one case the rabbit was killed five days after excision of a portion of the liver, and on examination the regenerated

portion amounted to 80 per cent. of the amount removed. In all his operations he never had any peritonitis.—(*La Semaine Médicale*, 16 April, 1890.)

Etiology and Surgical Treatment of Septic Peritonitis.—In an editorial in the *Annals of Surgery* by Dr. Geo. N. Fowler an extract is given of Reichel's paper on the above subject (*Deutsche Zeitschrift f. Chirurgie*, Bd. xxx). The absence of evidences of peritoneal inflammation in those who have died after laparotomy does not necessarily combat the belief that the cause of death was due to septic intoxication, for it is observed that persons dying from ileus and with intestinal paralysis resulting therefrom perish from sepsis before the occurrence of peritonitis. In experiments on animals Reichel found wide and unexplainable differences in individuals in respect to the susceptibility of the animal itself, as well as to the ability of the peritoneum to absorb septic material. Reichel's studies upon septic peritonitis following laparatomy are based on 174 cases occurring at the Berlin Gynæcological Clinic. In general, the simpler and more uncomplicated the operative procedure the more uninterrupted the course of recovery and the better the prognosis. Abdominal ascites, or the presence of fluid which has escaped from cysts in the peritoneal cavity, is an unfortunate complication, at least 22 per cent. of the fatal cases dying from sepsis arising from this cause. Exploratory incision in those cases which proved to be malignant seems to have been not without danger, 20 per cent. dying from infection following these operations. Peritonitis arising from the bursting of the pedicle of an ovarian cystoma does not necessarily give rise to sepsis nor increase the danger thereto, save that it gives rise to a large number of adhesions and increases thereby the amount of wound surface exposed by the operation. The belief of Kümmel that even in the most carefully conducted antiseptic laparotomy germs will find their entry into the peritoneal cavity is supported by Reichel. The explanation of the immunity from sepsis which these patients enjoy is to be found in the rapidity with which the effused peritoneal fluids with the germs are taken up by the serous membranes and transferred to the blood current, from which latter they are

readily eliminated. . . . . The method of Mikulicz of packing iodoform gauze into the peritoneal cavity is objected to on account of the danger of iodoform poisoning as well as those which may arise from removal of the gauze. There is also danger of ventral hernia. Experimental attempts to successfully treat septic peritonitis artificially produced in animals were almost entirely without success. Irrigation of the peritoneal cavity with sublimate, chloroborate of soda, salicylic acid, etc., were useless. The animals quickly perished. Laparotomy performed after the introduction of fæcal matter for the purpose of cleansing the peritoneal cavity, and prior to the development of peritonitis, resulted in the same way. Irrigation, says Reichel, is not only useless, but even in healthy animals proved to be injurious. Somewhat better results were obtained by sponging gently the peritoneal surfaces with bunches of gauze and employing the gauze in the drains of Mikulicz. In nine experiments on dogs, two recovered by these means. The author is skeptical concerning the value of surgical treatment of peritonitis, except where the septic peritonitis is encapsuled, due to intestinal perforation, and in which there exists an early opportunity of cleansing the cavity and closing the perforation.

Operative Treatment of Dislocations Irreducible by Ordinary Means.—Mr. Mayo Robson (*Lancet*, July 26th, 1890) gives notes of several cases of dislocation which after ordinary means of reduction had failed. Joints were explored through an incision and either reduced or otherwise treated. In one case, that of a boy aged 11, who was seen four weeks after a dislocation of the elbow backwards, an incision was made four inches in length over the elbow joint; the triceps tendon was divided and the joint opened. It was then seen that the coronoid process was broken off and fractured into two parts, one being attached to the brachialis anticus and the other to the stump of the coronoid process. The external lateral ligament was ruptured, and through the rent the head of the radius was thrust. On division of the ligament the dislocation was reduced, the parts slipping easily into position. The joint was well irrigated with sublimate solution, the triceps tendon stitched, and the wound closed. The arm was put up on an internal rectangular

splint. The wound healed by first intention, and two months later the patient had a good, freely movable and useful elbow joint. In another case of dislocation of the elbow, the capitellum of the humerus was broken off and fixed to the coronoid fossa by callus, so to get a movable joint the lower end of the humerus had to be removed. The patient recovered with a good, useful elbow. In a case of dislocation of the right hip backwards in a man aged 35, in which reduction failed by manipulation and pulleys, the head of the femur was cut down upon and freed from its attachments, and still reduction could not be accomplished. On further examination it was found that the acetabulum was filled with callus; the head of the femur was therefore removed and the limb brought into fair position, and was kept there by a splint. After nine months the patient could move his thigh freely, and could walk well with the aid of a stick. In conclusion, the author says he has never seen any harm, but always benefit, result from this operative treatment, and he feels justified in advocating a resort to operation in all cases of irreducible dislocation, when the general condition of the patient is such as to warrant belief that he will bear operation.

New Operation for Prolapsus or Procidentia of the Rectum.—Brigade-Surgeon McLeod, of the Indian Medical Service, relates a case of prolapse of the rectum (*Lancet*, July 19th, '90) in a Hindu youth of 19 years, for which he performed a new operation after trying various other methods. The surface of the prolapse having been washed well in a 1–10 solution of carbolic acid, it was reduced and the left hand passed up into the abdomen, and the fingers made prominent above Poupart's ligament, care being taken to remove the small intestine inwards. A long steel acupressure needle was now passed through the abdominal parietes into the cavity of the gut, guided across its interior by the fingers, and passed outwards until it emerged about three inches from its point of entrance. This needle was placed parallel to and about an inch above Poupart's ligament; another needle was inserted through the bowel and abdominal wall about three inches above this one, and rather external to it, so as to secure the intestine in an oblique position from below upwards and outwards. The upper end of the rectum or the

lower end of the sigmoid flexure was thus temporarily fixed in the desired position by these two needles. The hand was now withdrawn from the rectum and the permanent stitching proceeded with. An incision about three inches long was made between the needles, at right angles to them, and in the long axis of the intestine, as near the middle of the affected part as possible. The abdominal wall was divided until the parietal peritoneum was reached. The left hand was now introduced into the interior of the bowel to avoid puncture of the mucous membrane, and, guided by the fingers inside the bowel, two series of loops of silk thread were inserted, four on each side, about an inch apart. The lips of the abdominal wound were brought together by another row of stitches, with intermediate horse-hair ones, which also penetrated the outer walls of the intestine. The patient recovered perfectly, and six weeks after operation was walking about apparently as well as ever, the rectum remaining in good position. It remains to be seen whether the cure will be a permanent one.

Treatment of Tubercular Joint Disease.—The latest methods for the treatment of tubercle have mostly taken the form of injections of antiseptic fluids. This has especially been the case with regard to tubercular disease of joints. Bruns and Krause (*Centralblatt f. Chirurgie*, No. 25, proceedings of German Surgical Congress, 1890) speak in the highest terms of the success of this treatment. Bruns has treated 50 cases, in all of which there was more or less improvement. Krause gives the results of 60 cases, the disease being far advanced in them all; of this number 13 were perfectly cured, no fresh attack occurring after one year. In the remaining cases, improvement was manifested in nearly all; two died, one from advanced phthisis and another from acute miliary tuberculosis. The best results were obtained when the knee was the joint attacked. In cases of tuberculous hip-joint disease, ankylosis nearly always occurred. In two cases of severe coxitis with numerous abscesses, erosion of cartilage and displacement of the articular surfaces, most satisfactory results were obtained. The treatment is easy to carry out. The injections are made with a strong exploring needle. The solution recommended by Bruns is one part of iodoform to 10 or 20 of

glycerine. Krause recommends a 10 per cent. mixture of water and iodoform, or a 10 p.c. emulsion of iodoform and glycerine. The injections should be made at intervals of two to four weeks, according to severity of case ; four injections will generally be found sufficient. After injection, free movement of joint should be made to distribute the solution. If pus be present, first evacuate with trocar. The relief felt by patient is almost immediate.—(*Lancet*, July 19th, 1890.)

Reviews and Notices of Books.

The Throat and Nose, and their Diseases. By Lennox Browne, F.R.C.S.E. With 120 illustrations in colour and 235 engravings, designed and executed by the author. Third edition, revised and enlarged. Philadelphia ; Lea Brothers & Co. 1890.

The treatise of Mr. Lennox Browne now before us has been, during the last decade, regarded as the standard text-book on laryngology in our language. The first edition, which appeared in 1878, was very rapidly bought up, and was completely exhausted in less than eighteen months. Many important advances in our knowledge of throat affections has been made, more particularly, as the author points out, in the extension of our views as to the causation of laryngeal disease and the attention paid of late years to the condition of the nasal fossæ as constituting the first avenues of the natural breath-way. The chief feature of this new edition is therefore fully emphasized by the expansion of that portion of the volume which treats of intra nasal and naso-pharyngeal diseases. The author has given more space to the consideration of the tonsils and their diseases. Within recent years much valuable work has been done in this direction, and the subject has been dealt with in this edition commensurately with its importance. It is therefore with interest we turn to Mr. Browne's chapter on diseases of the faucial tonsils. These structures are described as being large lymphatic glands whose function it is to secrete leucocytes, which pass by diapedesis from the lymph follicles into the crypts and act as phagocytes or scavengers in the mouth and pharynx. The

idea is now gaining ground that tonsillitis is nearly always in association with abnormal states of the buccal secretions. Probably nine out of ten cases of tonsillitis are associated with the growth of micro-organisms in the mouth and throat—the buccal secretions are thus extrinsically contaminated. Under this heading we must include ordinary insanitary and hospital sore throat, together with the tonsillitis (whether membranous or not) of scarlet fever, diphtheria, smallpox, measles and typhoid.

It was long ago believed that the tonsillitis associated with the gouty and rheumatic diathesis, as well as that due to exhaustion and mental fatigue and that occasioned by an ordinary catarrh, were not catching, were of a non-opidemic form, and were not therefore connected with the presence of a micro-organism. Evidence, however, has been brought forward to show that acute rheumatism, and especially rheumatic tonsillitis, is a germ disease; and it is suggested that the secretions of the mouth and throat form a fertile culture ground for micro-organisms when the buccal secretions are intrinsically contaminated by the salivary and oral glands acting as extraordinary channels of excretion in catarrhal and diathetic states of the system.

With regard to the etiology of tonsillitis, the author has long been of the opinion that the rheumatic diathesis invariably exists in those patients who are subject to recurrent tonsillitis, and that the predisposing causes in the two diseases are identical. This idea he long ago enunciated, and though it was received with ridicule in some quarters, he has now the satisfaction of seeing many others adopting his view of the connection. This rheumatic analogy is further carried out by the effects of treatment, the almost specific effect of guaiacum in tonsillitis being specially noticeable. Mr. Lennox Browne is partial, however, to salicylic treatment, and generally adopts it as preferable to that by aconite, "for one reason that it is of greater activity in preventing extension of the rheumatic process to either muscles or articulations." Additional chapters have been added, in which the diseases of the nose have been especially dealt with. We cannot speak too highly of the well-executed coloured plates, the handiwork of the author. They are true to nature, and will be found very useful in practice.

The Essentials of Refraction and the Diseases of the Eye. By EDWARD JACKSON, A.M., M.D., Professor of Diseases of the Eye in the Philadelphia Polyclinic and College for Graduates in Medicine. And

The Essentials of Diseases of the Nose and Throat. By E. BALEWIN GLEASON, S.B., M.D. With 118 illustrations. Philadelphia, 1890.

This book has been written to meet the requirements of the pupils of the Post-Graduate School, since ophthalmology, even in an elementary form, is not a compulsory branch of undergraduate instruction in the United States. The authors have omitted anatomical and physiological descriptions, which can be found in text-books, of those subjects, and have confined their attention strictly to what they consider essentials. The work is written in a clear, concise style, and few words are wasted, but we cannot help thinking that a graduate seeking instruction in ophthalmology should master the leading treatises on such an important subject and not trust to an epitome of this kind. As the book is also being published in England and Australia, it will probably be found very useful by students preparing for the lower grades of surgical examinations in those countries.

The Treatment of Disease in Children. By ANGEL MONEY, M.D. (Lond.), F.R.C.P., Lond. Second edition. London: H. K. Lewis, 136 Gower street. 1890.

The fact that the work before us has, in so short a time, passed into a second edition is convincing proof that it was needed by the profession. As we did not notice the first edition, we may tell our readers that the author has succeeded in producing a very useful handbook dealing with a subject generally neglected in our medical curricula. There are not many medical men who begin practice without feeling that their knowledge of the diseases of children is defective, and in the matter of treatment they feel themselves very much at sea. Dr. Money's work at this stage of the professional career will prove itself useful, for it deals not only with those minor details of treatment which are so necessary in the management of children's diseases, but with the general principles of therapeutics. The outlines of diagnosis

are given, for, according as the author puts it, diagnosis is the Alpha and the Omega of treatment.

The two first chapters are devoted to general considerations of diet, hygiene and treatment, and here some valuable information will be gained which will help the family practitioner in many of the difficulties which lie in his path. The other chapters deal with diseases in the order usually followed in works of the kind. We especially commend those on rheumatism and on the diseases of the nervous system. The author has taken pains to provide his reader with an account of every treatment recommended, and in this direction he has perhaps gone too far, such notices being more suited to a large treatise than to a work belonging to a practical series of text-books. We would much prefer knowing what has been the author's experience of a certain treatment rather than that he should think it necessary to detail the manifold recommendations made by others whose experience has probably not been as extensive. A young practitioner cannot do better than to add to his library a copy of this work, for sooner or later he will find it a friend in need.

Annual of the Universal Medical Sciences. A Yearly Report of the Progress of the General Sanitary Sciences throughout the world. Edited by CHARLES E. SAJOUS, M.D., and seventy Associate Editors. Vols. I—V. 1890. Philadelphia: F. K. Davis.

The Annual for 1890 is in no way inferior to its predecessors. When the idea was first entertained of publishing every year an extended synopsis of all the medical sciences, it appeared as if the task were too great and that the undertaking was on too large a scale to be practically useful. It has now been conclusively proved to the members of the profession that Sajous' Annual is a thing, like the telephone and the typewriter, that cannot be done without. It enables the medical writer to find references to the work he has in hand. The practitioner who is, or thinks he is, too busy to pick out the useful and profitable out of the mass of journals he is expected to read, will find compressed into these five volumes all that is worth reading of the publications of the preceding year. The specialist working at his own little corner of the field can, without much

unnecessary trouble, find out what is being done by other workers on other parts of the farm. In short, Sajous' Annual is a work no medical man can afford to do without, and a library cannot be considered complete without a file of it. Seventy editors are engaged in the compilation of the work, and over eight hundred medical journals are laid under contribution. The system of references is very easily understood, though we think that the reader would be placed at an advantage were the list of journals with their distinctive numbers to be placed at the end of each volume instead of at the end of the whole work. The illustrations are very numerous, and in their execution there is nothing left to be desired.

Practical Sanitary and Economic Cooking, adapted to Persons of Moderate and Small Means. By Mrs. Abel. The Lomb Prize Essay. Published by the American Public Health Association. 1890.

Recognizing the importance of good cooking from a hygienic standpoint, and probably aware that the cooking of the working-classes is very bad, the American Public Health Association offered one of its prizes for a practical cookery-book suitable for that class to which culinary reform was so necessary. Seventy essayists competed for the five hundred dollars offered as a prize, and Mrs. Abel was the winner. We have looked into the book, and so far as we, in our great ignorance, can venture an opinion, it appears to be exactly what is needed. There is no doubt great waste and little comfort in American cooking, and we regret that it is our duty to charge the American housewife with being the principal cause of the national dyspepsia. No household is happy if the husband is uncomfortable and cross, and no husband can help being uncomfortable and cross when his digestive apparatus is up in arms and carrying on a warfare with a mass of ill-cooked food.

Essentials of Anatomy and Manual of Practical Dissection. By Charles B. Nancrede, M.D. Third edition. With thirty colored lithographic plates. Philadelphia: W. B. Saunders. 1890.

Our opinion has already been expressed regarding these Question Compends got up to aid lazy students. Although the authors always state that the object is not to supplant larger

(and better) works, yet such is their tendency. The volume under review has reached its third edition, and appears to be popular. This edition has been adorned with colored plates of the vascular system reproduced on a small scale principally from Quain's plates of the arteries, with a few from Savage, Nuhn and Hirschfeld. They are certainly very well done, and would serve their purpose quite as well if issued as an atlas, quite distinct from the Question Compend.

BOOKS AND PAMPHLETS RECEIVED.

Extra-Uterine Pregnancy, The History of, by Dr. G. W. Miltenberger. Laparotomy for, with a report of a successful case, by Dr. T. A. Ashby. Review and Discussion, by Dr. H. H. Kelly. Published by order of the Obstetrical and Gynæcological Society of Baltimore.

Recollections of General Grant, by Geo. W. Childs. Philadelphia, Collins Printing House. 1890.

Lectures on Some Points in the Treatment and Management of Neuroses, by E. C. Seguin, M.D. Providence, R.I.

Proceedings of the Canadian Institute, Toronto, April, 1890.

On Perinæorrhaphy by Flap-splitting, by Fancourt Barnes, M D. London, John Bale & Sons.

The New Treatment of Peritonitis, by Emory Lamphear, M.D. Kansas City, Mo.

Eighth Annual Announcement of the Woman's Medical College Toronto.

An Examination of the Knee-jerk in Sixty-two Cases of Interstitial Inflammation of the Cornea, by W. Lang and Casey A. Wood, C.M., M.D. Reprinted from the Royal London Ophthalmic Hospital Reports. December, 1889.

A New Operation for Prolapsus of the Anterior Vaginal Wall, by Andrew F. Currier, M.D., New York.

Biennial Report of the President of the Board of Health to the Legislature of the Hawaian Kingdom. Session of 1890. Honolulu, printed by the Hawaian Gazette Co. 1890.

Selections.

ABRIDGED REPORT OF THE ADDRESS IN SURGERY,

Delivered at the Meeting of the British Medical Association in Birmingham.

By Lawson Tait, F.R.C.S. Edin.

Mr. President and Gentlemen,—I do not know that there is any position in which one who practises the handicraft of surgery could feel a more weighty responsibility than that which I now occupy, and if responsibility is the best measure of dignity, I frankly acknowledge that there is no position in the whole wide world that could by any possibility be conferred on me which I should regard as a higher honor than that which I am about to try to fill worthily in addressing this great Association on the subject and object of my daily life. From the earliest time of which we have any historic record, mankind has ever been earnest and selfishly sincere in his efforts to diminish suffering, to prolong life, and to cure disease. Generation after generation has made fresh efforts of its best and greatest in such directions as these, and ever and anon fresh victories have been won. That we have made mistakes, that we have had to confess that our favorite theories and some of our best established practices In one generation have become the flogging posts in the next, is but to confess that we are human. It is not necessary that I speak for the importance and dignity of our work, for that is admitted on all hands, even with full knowledge of our shortcomings. Humanity has, on the whole, a complete confidence in us, not that we are perfect, but as far as we are so approached we honestly do the best we can. It behoves us, however, from time to time, to search out the innermost corners of our chambers, to rid them of all uncleanliness, and then to garnish them and to set them in order, hiding no blemish, but striving in all ways to the perfection of that noble work to which we have set our hands.

You have come to a great home of industry, the very paradise of the handicrafts. To look at the work, you may think that as little skill as exists in human sense would be required to cut an ivory nut into what they call blanks in a manufactory of buttons, but as you watch the patient workman for a few hours, and then think you would like to try to rival his skill, you take your place at the saw bench, and if you are not preternaturally skilful it will be only after sacrificing a few of your fingers that you find yourself behind him inexplicably in every conceivable way. You would then begin to appreciate the principle we all value here so much, for it constitutes the making of our factories,—I mean the principle of the subdivision of labour. In such an apparently rough, and certainly

very humble, employment as that of the cutter of the button blanks, which I have taken as my text, a few questions will help us to much thought, and the answers may excite in many of us solutions for problems which are now greatly exercising the authorities of our medical corporations. You will find that even the cutter of the ivory nut will prove to be a more docile apprentice and a more competent workman if he has had a good education before he enters the shop, such an education as we supply now in our Birmingham schools, in a fashion compulsory and almost free. I wish it were entirely free. The philosopher who asserts that liberal education will spoil the future craftsman is a mere bookworm, without a true knowledge of human powers. We further find that our button cutter must go through a long apprenticeship to accustom his eye to judge the nut, to avoid its faults, to accustom his fingers to the sense of resistance, and even his ear to the sound of the saw. Mere general education will do nothing of this kind for him, but the general training he has had will open his mind to the advantage of accuracy in all things, and so much the more receptive for the monotonous details of his work.

We may easily, and I think justly, apply these facts to the training required by our own handicraft of surgery. Everyone has something to say on this subject, and I do not see why I should refrain from expressing my views, especially when I find that the general course of opinion is running at the present moment on lines on which my own has always lain. A surgical craftsman must be a trained gentleman, accustomed by a classical education to use his native tongue with ease and fluency and without confusion. He must have the fundamental principles of reasoning and of business habits instilled into him by such mathematical training as will be involved in his being able to pass some one of the ordinary examinations now insisted upon by all the licensed bodies. If he can spare the time and money to become a graduate in Arts, so much the better. Up to this point we are all agreed. Our apprentice surgeon has now to enter upon his purely professional training and to learn the constituent parts of the body and their functions, and here comes in our first difficulty. I for one desire to raise my voice in protest against the absurd attention to detail and the enormous waste of time involved in the present biological training of the surgeon student. Let him be grounded in every fact of anatomy which may, under the rarest and most unlikely conditions, aid him to appreciate the results of an injury, or a displacement, or of a new growth; let him be grounded in all such items of information concerning the ultimate structure of organs and their mediate and immediate functions, and the changes to which disease subjects them. Let him be placed so constantly alongside somatic sections that he will not only learn his anatomy, but that he will never

forget it. Let him see things and think of them so often that he will, as it were see through his patient as this man sees through his nut before he cuts it up. But I plead most earnestly that your successors shall be spared that senseless grind at useless details of anatomy with which our own young memories were burdened—details which he can remember only by a demoralizing system of catch words—details which he prepares himself to forget the moment the necessity of examinations is over.

Still more strenuously I appeal that our student be altogether relieved from that senseless system of biological training which has set in as a fashion at Cambridge, at Oxford, and at Edinburgh. Not many years ago I attended a lecture on physiology given to medical students, which consisted in a explanations of a brass instrument resembling a model of Clapham Junction, intended to explain something about muscular fibre. I could not understand it, of course; I was too much of an old fogey, but I had this consolation, that when talking over it with my young friends who had attended the lecture with me, I found they could make nothing of it either, and it worried them as much as it had worried me. But there was a difference between us—it was demoralizing to them, for it discouraged them, and small wonder! And how angry they must feel, when they come to deal with human patients and human disease, that all these nonsensical details are of no use to them—not even for the purpose of general training—when they find, in truth, that the time occupied in mastering such subjects has been absolutely thrown away. For students who are disposed to appear for a science tripos, or who have such a line of life open for them or the tendency towards it, who are possible professors of anatomy or biology, this kind of work is of course admirable; but of our medical students, nine hundred and ninety-nine out of every thousand will have to find their positions at the bedsides of their fellow-countrymen in times of accident and sickness.

I remember that we had to learn that the direction of the anterior cornu of the fourth ventricle of the brain ran a course which was backwards, outwards, downwards, forwards, and inwards, and we were enabled in the most improper way to remember these important facts by the word "bodfi." Has "bodfi" ever served any of you at the bedside? Is there any conceivable condition of human accident or ailment in which "bodfi" could assist you to relieve your patient? What I wish for our students is that they should go back to the institutes of medicine, and leave comparative biology to those who may be able to benefit by it.

Again let me remind you of the terrible task that we had to fulfil in committing to memory the names and relation, the ligatures and points of contact, of the bones of the wrist and

of the ankle-joints. To me this task has never served in the faintest instance. If, unfortunately, I had ever to submit one of my limbs to a joint amputation, I should most unhesitatingly insist upon the selection of that devised by Mr. Syme. The other more fanciful methods of amputation, I believe, are too constantly condemned for very many reasons. Still, it may be that occasionally—perhaps ten times a year in the whole population of England—they are performed. For some specific reason they are not performed by surgeons in the country, distant from reference libraries and anatomical museums, and men who elect to perform such operations can in the course of twenty minutes or half an hour master the relations of these bones sufficiently to enable them to carry out the particular object they had in view. The question which occurs to my mind with great force is, Can the occasional performance of these somewhat eccentric proceedings justify the infliction of the senseless labour of committing all these special peculiarities of these bones upon every medical student who has to appear for examination? I cannot imagine that the committal to memory of these peculiarities can in itself constitute any kind of mental training, and I think the present system of anatomical education involves a gigantic waste of time and a much frittering away of serious mental effort. As these words were gathering themselves in my mind, I turned to a number of the *Journal* which had just appeared, and therein I found a most interesting account of "Modern Assistants," by "A Sufferer," the sufferer in question being a practitioner who had, by reason of his work, to employ a recently qualified young man as assistant in his practice. In language far more trenchant than I can possibly employ he gives a line of argument which I appreciate to the full, and he finishes what he has to say in these words:—

"But no reasonable person can doubt the superiority of modern methods of training over old-fashioned ones. Our fathers made their apprentices pay them for the acquisition of practical experience, while we, more liberally, subsidize medical tyros to gain experience at our expense. Our predecessors thought that much could be learned of art and something of science in the surgery of the private practitioner and by the bedside of his patients; we, more modestly, hold that the necessary science can only be taught at the hospital bedside, even when overcrowded by a hundred students, while art we practically ignore. But wisdom, after all, is justified of her children, and modern methods can proudly point their resultant—the modern assistant. In face of such a practical proof criticism is silenced. 'Of course you can vaccinate?' said a surgeon to a doubly qualified and newly fledged assistant the other day. 'No, I cannot,' was the reply. 'Of course, I hold the certificate of proficiency in vaccination, but I never vaccinated

a baby in my life.' Could anything be more entirely satisfactory and excellent than this, or more reassuring?"

In the old days—days which I can remember—it was charged against the corporations that they turned out a large number of ill-educated empirical practitioners who knew nothing but their patients. Now, I say, the tendency is to turn out a still larger number, a very much larger number, of scientific young tyros who know neither patients nor their diseases till they have gone through a second pupilage extending for years after they have left their university. This second pupilage lies in the rough school of experience, and in its second training they will be found deliberately and at once to throw overboard at least two-thirds of what they have learned in the first. What the boy wants after his general education has been fully developed, and his fundamental knowledge of useful anatomical facts and physiological principles has been made perfect to the utmost of their extent for usefulness, and not one scrap beyond that, is that he should be dealt with as we deal with the cutter of blanks in the button manufactory. He should be put at once into contact with his material. I therefore vote cordially with those who demand the restoration of the apprenticeship system in such fashion as modern requirements indicate. It is of course no longer to be a seven years slavery in mixing pills and spreading plasters, for the modern manufacturing chemist does all of that for us now, but it should be a period of at least two years spent in learning how to deal with patients.

The road to success in the practice of our art lies not only in knowing how to deal with disease, but how to deal with men and women while they suffer from it. Our biological practitioners have no experience of either of these lines of research, and they therefore fail miserably. I had to meet a most excellent and estimable practitioner of the old school in the north of England some months ago, and he told me that within a year he had had three assistants, all Bachelors of Medicine and Masters of Surgery from one of our most flourishing biological schools, "Sir, would you believe it," he said to me, boiling with indignation as he thought of the needs of his large colliery practice, "not one of them could put on a splint! and the third was such an ass that he used to lecture a collier's wife on how fishes lost their eyes in coal-pits instead of supporting her perineum." I am speaking from a lamentable fulness of similar experience, and I feel that no other remedy is possible than that which I recommend, and the sooner we begin to cry out for it the better. Our corporations are deaf to our appeals upon such subjects, because their rulers no more understand the requirements of the general practitioner than they understand the Confucian system of philosophy.

The Council of the College of Surgeons is directing its system of examinations more and more in the ultra-scientific direction,

and the demand of the members of the College for a reasonable share of representation on the body which at present is the great manufactory of general practitioners of England is largely based on this preposterous blunder. As I read the questions put to the candidates at the College examinations, I wonder more and more how such a training as they involve can by any possibility suit men for the every-day work of country practice. The new scheme of the University of London under which the new University will be largely constituted by the two Royal Colleges will only go to perpetuate the mistake. With a spirit of selfishness which is inexplicable, this new institution is to be confined, so far as its government is concerned, to the eleven medical schools of the metropolis, including the School of Medicine for Women; and all discipline of education and control of examinations will rest in the hands of our metropolitan rivals. There will be, therefore, a constant struggle between those outside the charmed circle and those within its pale; and I speak for those of us concerned, as we are here, for a large and growing school, who will find ourselves greatly handicapped in the fight. But we shall not be easily beaten. We believe in teaching our students what they can best use when they enter upon their struggle for existence, and it is upon that kind of material we want to have them examined; we therefore propose to agitate without ceasing for a more direct representation of the body of the profession at those tables where the direction of medical education and medical examinations are controlled. Upon one point we are coming to an agreement, and that is a demand for the restoration of the practice of the apprenticeship. But I would carry it further. While the student is attending to this most important part of his training, he ought at the same time—and now I am speaking for those who have to follow the craft of surgery—to be taught how to use his hands. I should send him, so many hours in the week, into the shop of the village carpenter; and I should have him trained to use a saw, a chisel, a plane and a skew, so that he should be able to make a long splint, if need be, as well as to put it on. And into the blacksmith's shop he should also go, till he knew how to strike properly with a hammer. Some of you may think this may be unnecessary; but if you could look with a workman's eye (as I can do, for I served my time at the lathe, the bench, and the forge) at a Fellow of the Royal College of Surgeons—I will not give his name, but you will find him in every large hospital in the kingdom—who used a saw for the first time in his life in the amputation of a human leg, and see, as I can see, what a horrible mess he makes of his work, you will agree with me that a training in practical mechanics is just as necessary (I say it is far more necessary) for a man who has to operate upon his fellow human beings as is a training in anatomy.

The great difference between the man who starts his saw cutting from the point of the saw and the man who starts from the hilt is just as great as—I think it must be greater than—the difference between the man who amputates a leg without any kind of knowledge of anatomy and the one who has such knowledge fairly perfect. During the two years that our student spends in this practical training for his after-life he would unconsciously imbibe the fundamental principles of the scientific training which he would afterwards have to undergo; he would see for himself day by day the characteristics of wounds healing healthily, and how different they are from those of a wound indicating action the result of constitutional empoisonment. The meaning of these differences he would learn afterwards at his clinical school. At present he can babble about the theoretical causes of the changes, but of their real facts and phases of them he knows nothing. After his apprenticeship, as he heard in the academical rooms the explanation of the process of the healing of a bone, he could recall to his mind illustrations in the practice which he had already gone through, and the combination of the facts as he knew them, with their explanation, would impress the whole thing on his mind in a way to which at present it is a complete blank. As a matter of fact, at present in medical education the cart is being uniformly put before the horse.

Having now delivered my soul concerning the training which I believe to be essential for the craft of surgery, I fall naturally into the utterance of some words concerning the practice of the art, and I pause at the outset in absolute wonderment when I contemplate what has happened in my own lifetime. The year 1847 was the real birth-date of our work, when there first fell upon man that gentle slumber, anticipated in the beautiful legend of the Garden of Eden when Adam's rib was resected, but which was not brought into the region of actual fact till that memorable night in Queen-street when Simpson, Keith, and Matthews Duncan "were all under the table in a minute or two," to quote Simpson's own graphic description. What had gone before that time was mere groping in the dark, and what has happened since could never have been ventured upon but for that greatest of all blessing—anæsthesia.

This, the greatest of all medical triumphs, at once broke down the barriers which had hindered the development of our art, and a vast change in surgical practice became apparent. Not only were the horrors of the surgical theatre banished, but the type of men who could and did practise surgery was altered—in some instances, though, not for the better. In the days before chloroform the man who "niggled" over an operation was avoided alike by patient and doctor. A man like Liston, whose manual dexterity is said to have almost approached the miraculous, had it all his own way. Syme returned from

London to Edinburgh for many reasons, but no doubt chiefly because his comparatively defective manual dexterity was very apparent in contrast to many of those with whom he had to be rivalry. He never could cut decently for stone to the end of his days, and, but for the aid of the chloroform of his greatly disliked colleague, we never could have had the splendid philosophical principles of surgery which Syme laid down. He never could have been the surgeon he was without the encouraging influence of an anæsthetic.

In fact, the history of this epoch of surgery is one of the most interesting there is, and I venture to say by far the most important. Indeed, it is only by reason that we are more or less all part of it that we do not see how overwhelmingly important the transition effected in the years 1850 and 1865 has been in the development of our art. In that time appeared men like Paget and Savory, who never could have been surgeons as Liston, Fergusson and Miller were, but who lived, and mostly are living still, to fill a higher and more useful post. They became the surgical pathologists, among the first of whom in date we have to put Stanley, and now they are a goodly army. They have lifted us from mere handicraftship to something approaching a science—approaching the position of a science more and more every day.

But, in addition to this, probably the best result of the change effected by anæsthetics, another of great interest arose about the same time. With the possibility of human benefit came a huge extension of the number of cases not only of those suitable for the new work, but of those who could bring themselves to submit to it. Before the days of chloroform vast numbers of men died of stone in the bladder rather than submit to the torture of the operation. But nobody is now foolish enough to refuse to submit to it. Operations were comparatively rare, and they were made the subject of vulgar theatrical display.

This strange perversion survives even to this day, and it makes me often sad to hear of the anxiety professed by many of my profession to "see" some great surgeon perform some big operation—an operation which they themselves would never entertain a wish to undertake. Such performances, I think, ought to take place only in the utmost privacy, and be witnessed only by such as can really be benefited by observing them—that is, men who wish to engage in operating practice and are likely to have fields in which to fulfil their wishes. Of course there are some operations to be excepted from such remarks, and the real intention of what I have said must be clear enough to everyone.

I have said the number of cases for operation vastly increased after the introduction of anæsthetics, and with this increase it became perfectly evident that no one man could grasp the

whole realm of surgical work. The subdivision of the work became inevitable, and the best and first example of this subdivision came in ophthalmic surgery.

I have not asked Sir William Bowman, nor have I inquired of Mr. Anderson Critchett concerning his distinguished father; I have merely gone to the old medical directories for dates, and I find the story told concerning these two men to be as follows. In 1850 Bowman was assistant-surgeon to King's College Hospital and assistant-surgeon at Moorfields; whilst Critchett was assistant-surgeon at the London and full surgeon at Moorfields. Bowman left King's College in 1862 and Critchett left the London in the following year after a very short tenure of the full surgeoncy; and these dates are of the greatest interest, as they allow of just sufficient development of ophthalmic pathology by Helmholtz's great invention to have persuaded both of those of whom I speak that their true vocations lay at Moorfields, where they both remained till 1877, and that they could not well combine general surgery with their finer work on the eye. There are some of whom it would not be true, but as a rule it is now quite true that a man, to succeed in ophthalmic surgery, must practise it exclusively, and I fancy that any exceptions would go far to prove my rule.

In abdominal surgery nothing was really done, if we except the truly brilliant achievement of Ephraim McDowell, before the days of anæsthetics. It is true that in this country a few parovarian cysts were removed, and a still smaller number of very simple operations for ovarian tumours were completed; but there is little that, whenever any serious complication was met with, the abdomen was promptly closed. No solid tumour was completely and successfully removed till that now before us fell to the hands of my valued old friend, John Day of Walsall, who was gathered to the majority only a few months ago. The greatest advance of all—the intra peritoneal treatment of the pedicle by means of the cautery, in the hands of Baker Brown, giving a mortality of 10 per cent.—was the real starting-point of all our progress, and that proceeding would have been an absolute impossibility without the aid of an anæsthetic. Then came Spencer Wells, who, with his precise, methodical plans and steadfast business-like habits, which have characterised all he has done, has established abdominal surgery as a distinct specialty.

As the practice of surgery has grown, so have the arrangements and provisions for its pursuit become enlarged and altered to suit the varying requirements. Great changes have been necessitated in our hospitals and in our medical schools—changes, again, to be traced directly to the inestimable benefit of anæsthetics. When I came to Birmingham in 1870 there was practically no hospital between Summer-lane and Stafford or between Bath-row and Worcester. The towns round about

us were supplied by old-fashioned dispensaries, where bronchitis was treated in the winter and diarrhœa in the summer. Serious accidents and important surgical cases were all jolted into the General and Queen's Hospitals. Old John Burton of Walsall, aided by Sister Dore, had just begun to show, in 1870, what a cottage hospital could do. Now we have not only cottage hospitals innumerable, but we have palatial receiving-houses for accidents and urgent cases at Dudley, West Bromwich. Walsall and Rugby, and many other important centres. These local hospitals would do credit to any commuffity, and the surgical practice in these institutions is quite brilliannt, as many of you know. We have now in our midst a Hospital for Diseases of the Eye superior to anything of the kind, and its four surgeons, engaged exclusively in special work, are not excelled in the excellence of their results throughout the wide world. Here, more than anywhere, can be seen the triumph of anæsthetics, for not one of our modern advances could have been accomplished without them. Jean Louis Petit planned and described in detail the method of curing the troubles of gallstones in 1745, but they could not be carried out till our patients were soundly under chloroform.

In dealing with the third division of my subject, I have less clear ground upon which to go, and I fear I must depend more upon what I wish were the facts than upon what can be actually shown in their present existence. But I sincerely wish that we had better surgical results than we have; I wish we knew more exactly what they are; and, most of all, I wish that we could go about establishing them in a more logical fashion.

It has often been said that the greatest of the gifts of God which take the form of genius—I mean oratory—is the most potent of all for immediate effect, but most transitory for fame; and so it is with the sister histrionic art. The dead printed matter (all that we have left of John Bright) gives not the slightest idea of the great artist he was. The phonograph may alter all this, and the orators of the future may enthral audiences as much as the skill of Leonardo captivates you in the chapel at Milan just as it could have done four hundred years ago. We have no such promise for the fame of the surgical artist, for he and his handiwork perish alike, leaving nothing but the bald and printed statement of cases. The limner's work lives for almost all time. We have only one comfort. In the days which Edward Bellamy predicts, and for which William Morris pines, the limner and the surgical artist will be the only highly paid craftsmen, for their art will remain something unapproachable by mechanical contrivance. This may be or may not, but it is a compliment of no small excellence that so great an authority ranks our craft so high.

In the results of our work we have much more cause for congratulation, but I would rather look on the other side of the

fence and wonder if they could not be improved, even with the methods we have now at work. For the last twenty years we have first been opposing a great theory; then we have been accepting facts on which it was based; then we have been rushing into violent and illogical enthusiasm about it, only at the end of all to throw doubt and dispute on the whole field. I confess I always doubt surgical theories, just as I doubt all theories of art. No school of art which started on a theory has ever made a lasting impression. Our surgical theories never lead to anything; not even the great antiseptic theory has led to any tangible result beyond what every housewife knew before its day—namely, that dead, moist organic matter will decompose if some agent or other gets to it. We know now the exact nature of this agent, but this is a new fact, not a new theory. The theorists forget that living tissue will not decompose under the access of the same influences—influences, indeed, which surround us at every moment of life, and pass by harmlessly. Now the theorists take a lingering farewell of their lost darling by saying, "Well, at any rate, it taught us cleanliness." As a matter of fact, the very reverse of this is true, for it was the arguments of those who opposed the antiseptic theory which demonstrated the successful cleanliness. The last phase of this discussion—I sincerely hope the very last—is the antiseptic accoucheur who pleasingly fancies that both his theory and his practice are new, whereas in matter of fact Semelweiss literally died for them nearly thirty years ago. No more instructive reading can be indulged in than a brief monograph which has recently been issued concerning the history of this truly great man—a man so great, that I think he deserves to have erected to his memory a statue in every civilized country. Semelweiss had no theory; he simply stated the fact that puerperal women in Vienna were poisoned by dirt. "Wash your hands," he cried, "and the women will not die," and his colleagues ruined him for his frankness. But he persuaded the world he was right. Simpson took up the fight with his accustomed vigour, and carried it through; and now, forsooth, we hear of the antiseptic theory as applied to midwifery as being a new thing.

What is wanted for the improvement of our surgical results is not any more theories, but better work and better systems of working, preceded by better systems of training. We forget that an art like surgery cannot be acquired by passing examinations. It is true that examinations admit to our academy schools in art, but they are merely for the purpose of selecting candidates upon whom it is likely that benefit will arise from the teaching which there can be obtained. Surgical art is not conferred upon the successful candidates by the College of Surgeons' parchment for the Membership, still less by that for the Fellowship. Like all arts, surgery requires some indescribable gift, easily recognized and appreciated when seen,

but wholly incommunicable by diploma or otherwise. With that gift the art may be acquired by persistent labour, but without the gift the labour is hopeless; and that this fact is being recognized in all our large centres of population, even in the close hospital corporations of the metropolis, is one of the most hopeful signs for better surgical results. Another hopeful sign is the demand for complete and accurate statements of results. Public attention is now being drawn very largely to the question of hospitals in general, and a most wholesome rivalry is being established upon the question of results. So much is this the case that grave suspicions are being entertained regarding all institutions who neglect or refuse to publish their results. I remember very well, when engaged some fifteen years ago in writing a book on hospital mortality, that I asked a large metropolitan hospital to furnish me with the facts of their amputations for a period of sixteen years. The hospital was notoriously reticent upon all such questions. The medical board answered my request by a resolution that it was not expedient to furnish me with the information required. I replied that if they did not furnish me with what I wanted within a month, I should publish their resolution in *The Times*, and, as this hospital was entirely dependent on annual subscriptions, they reconsidered their decision. Their amputation results were ghastly; probably they did not themselves know how bad they were. Publication of these results had a marvellous effect, for now the same hospital has an amputation mortality of less than one-half what it was sixteen years ago,

To Sir Spencer Wells is most undoubtedly due the credit of putting the publication of surgical results on a business-like basis. When the results in abdominal surgery, which began to be obtained about twelve years ago, were first published, they were so amazing that the favorite criticism of them was that they must be lies. This sort of thing at first was very irritating, and used to make me very angry; but for many years past I have ceased to trouble about it, and the incredible things of eight or ten years ago are now matters of every-day experience.

Another great advance required is the division of logical plans in recording and classifying the results and also the adoption of reasonable methods of conducting the investigation. For example, no one would now, in making a research on the mortality of amputations, arrange his figures without a careful separation of amputations for accident and those for disease, and a perfect arrangement of the cases according to the limb affected and the point of amputation. But until Simpson pointed out the necessity for such divisions, the importance of them was not clearly understood, certainly was not fully admitted. Arising out of a matter so simple as this there are, there must be scores of points which require settlement, yet

no serious attempt has been made even to indicate what such points may be. It may be, for instance, that one particular method of flap-making will suit primary amputations better than another, and a point so important could be settled in twelve months by a simple agreement amongst a group of hospitals and their surgeons. Let one set of men work steadily at one method for one class of cases, and another set at another method, and the statistical laws will be found faithful to the truth, as they ever are when the figures are large enough. Instead of adopting a method like this, our present method is that when such a point is raised for discussion surgeon after surgeon rises and gives vent to vague impressions, which he is pleased to elevate into the name of opinions. The fact is that everyone has been trying all the plans in a disconnected, illogical way, from which truth never can be evolved. One of the many things I admired about Tom Keith was the religious way he stuck to the cautery in treating the ovarian pedicle. Nothing could shake him. I was equally obstinate in my adhesion to the silk ligature. The result was that when we came to compare notes after many hundreds of ovariotomies, we found that, so long as the bleeding from the pedicle is effectually stopped, and the pedicle carefully dropped back into the peritoneal cavity, it does not matter a pin how it has been treated; and that, I venture to say, is a surgical conclusion, not only of the utmost importance, but one which never can be controverted. The so called discussion on special subjects which are now fashionable at our annual gatherings illustrate well how utterly futile our present method of research is. Take the case of the kidney. We have half a dozen men discussing such a question as that of removing a suppurating kidney as a primary operation or subjecting it to a primary drainage, and when you have heard all that they have to say, you are no wiser on the subject. But if four men would subject all their cases to one method, and four others would confine all their work to the second method, within five or six years the question would be definitely and finally settled. The latest instance of this kind is the question of lumbar *versus* inguinal colotomy, concerning which I am certain that the shield has a silver as well as a golden side, and that our present method will never enable us to differentiate the two methods.

It may be urged against my proposal that such a plan of research would hamper liberty of action, but I answer that our present liberty of action is not wise; indeed, it is not liberty at all, but licence. Let me take a personal case. It is well known that I adopt a special method of treating uterine myoma, and that there is a rival in the field in the shape of the electrolytic method. It is a charge also against me that I will not try the electrolytic method—a charge to which I readily plead guilty—and for this conduct my defence is simple.

I say that no logical and complete conclusion can be arrived at by everybody treating everything in every kind of way. Having opened out a continent, I want to know all about it. I pursue, therefore, all the windings of its rivers, I measure the heights of all its mountains, and I give you the results of my ten years' wanderings. Let the electrolycians do the same, and then you shall be the judges, not upon men, but upon principles. Meanwhile I am sure, in the interests of our art, that it is better that I should continue my research in a logical fashion, unhampered by qualifications which would make a just conclusion on your part an absolute impossibility, and which would lead to nothing in my own mind but confusion.

On the other side of this most important question lies another grave source of error, which is too true of our research into surgical results, though it is far more extensive in its results in general therapeutics in the practice of medicine. No sooner is a new drug placed on the market than everybody rushes to try it. At first all is well, and "rubbishin" is good for everything. Then come a few isolated hints about the "toxic effects of 'rubbishin'," and finally "rubbishin" gets dropped altogether and we hear no more about it. It is positively awful to think of what some of these new drugs—say chloral, for instance—may have done before they got settled. For the mischief that is done in this way the public is largely to blame—if, indeed, it is not wholly to blame; they like the idea of a new discovery, especially the upper classes, and I am told by men practising near the dwellings of the princes of the land and at fashionable watering-places that the great burden of their lives is to keep up with the new drugs and the new dodges. For my part, I instinctively distrust men who are always going in for new drugs, and, for myself, I will have none of them. In our surgical results there is too much of the same thing. Take the case of Dieffenbach's operation for squint, a most useful proceeding judiciously applied over a limited area. But I remember the time when every urchin with a squint was collared in the street and walked into the operating room to have one rectus divided in order that its opponent should have full power to swivel the eye out in the opposite direction. Everybody was "doing squints." Similarly, when removal of the uterine appendages was proposed, but long before the just and true principles on which it is now based could be formulated, everybody rushed into the trial of it, and the result was a disastrous epidemic, the chief burden and discredit of which fell upon me. I was more horrified than I can tell, and much of my time was taken up in disclaiming the doubtful honour of what was called "Tait's operation," in the performance of which every principle advocated by Tait was neglected or deliberately outraged. If the men who engaged in this work had waited for a reasonable trial, a fair

discussion, and a just verdict, much discredit for our art would have been spared us. The just verdict has now been arrived at, and the misrepresentation of which this operation was the centre has now ended. But the example is a very telling one in illustrating the want of logical application in our present method of research upon surgical results.

This vast and powerful Association could accomplish almost anything it wished after determining that it was for the good of the world, and after a reasonable method was pointed out for its accomplishment. We tried an expensive experiment in the way of a collective investigation, but from intrinsic reasons it was a failure. The fact is that its plan was lost in diffuseness and defeated by the machinery involving a vast number of contributors—in fact, to increase the means of success involved the very essence of increase of risk of failure.

If you want a thing done well, you must either do it yourself or trust it to a very small number of workers. I do not think it would be too much to ask our Association to place every new drug and every proposal for a new surgical proceeding under the observation of a small responsible committee, whose judgment should precede anything like a wholesale experiment by the professional public at large. This step would certainly clear away a vast amount of rubbish, and would direct more extended research into definite lines, instead of the indefinite and haphazard roads it now runs upon in almost every instance. And I cannot help feeling it would prevent us doing the great deal of harm which is now done in the early stages of even our best proposals.—*Lancet*, Aug. 2.

THE

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PURE SCIENCE AND PRACTICAL MEDICINE.

The Address in Surgery at the recent meeting of the British Medical Association, which we publish in this issue, is likely to interest everyone. Although few will agree with Mr. Lawson Tait on every point he has taken up, yet there is undoubtedly something more than a grain of truth in the statement he makes to the effect that there is a dangerous tendency in the present day to make the young practitioner too scientific and not sufficiently practical—to devote an undue proportion of time and energy to collateral sciences and laboratory pursuits at the expense of medical and surgical bedside work. That a sound grounding in the facts of science, in elementary chemistry, physiology and anatomy is a necessity no one will deny, and it goes without saying that these branches should be taught in laboratories and not in lecture-rooms, but the teachers should never lose sight of the fact that they are dealing with medical students who are seeking just so much elementary knowledge as will fit them for the due appreciation of their clinical studies. The object of medical schools is to make men medical practitioners, not to teach abstract sciences, and so long as but one grade of practitioner exists, so long as candidates for the degree have all to spend the same length of time at college—the limited period of four years—it will not be practicable to teach them thoroughly both experimental science and clinical medicine and surgery.

There is a vast deal of experience and observation required in the practice of medicine, and that school is the best which supplies most opportunities for bedside work, which should

be supplemented by clinical and pathological laboratory studies, but it should be made clear to students that observation of sick people is of more importance than the chemical or microscopical examination of their secretions or the dissection of their bodies after they are dead. There has been undoubtedly of late an undue proportion of attention devoted to the chemistry, microscopy and bacteriology of disease, and not enough to the semeiology. Students are being encouraged to hunt for the tubercle bacillus in the sputum before they have learnt to distinguish a dull from a clear pulmonary note. There is such a thing as a bedside shrewdness which was cultivated to a remarkable degree before instruments of precision came to be used. If Hippocrates were to do a day's duty at the Montreal General Hospital we have no doubt but that we should find few mistakes in his diagnosis and prognosis. We must not forget that all or nearly all the good work of this century in connection with fevers—the work of Graves, of Jenner, of Shattuck, and others—was done without a clinical thermometer. We remember to have heard it said of the late C. J. B. Williams that the loss of his hearing in no way affected his powers of diagnosis in thoracic disease. It would seem that the educational cart is being placed in front of the horse, that the use of instruments of precision is being taught before the senses are educated. Mr. Tait is not alone in entertaining such opinions; on the contrary, there are many who, with him, advocate the restoration of the old apprentice system, and though this is certainly a swing of the pendulum in the opposite direction, yet it must not be forgotten that under this system were educated some of the brightest ornaments of the profession, and it is a question whether their successors will equal them in elevating and maintaining the standard of British medicine and surgery.

PROTESTANT HOSPITAL FOR THE INSANE

The past month will constitute an era in the treatment of the insane in this Province, having witnessed the opening of the Protestant Hospital for the Insane. While it is to be regretted that a leaven of the much-to-be-deplored and decried farming-out system has, from lack of funds for its support, been forced

upon its managers, still, a wise proviso in its charter, to the effect that all monies accruing from whatever source *must* be spent upon the building and its inmates, will be a strong safeguard against the evils of this system.

The number of admissions to the new institution, up to the end of the month, has been thirty, and two patients have been discharged as recovered. Those admitted have all been outside cases, for as yet no transfers have been made from Longue Pointe. In order to accomplish this latter, however, forms have been prepared by which parties having friends or relations there may make a formal application to the Provincial Secretary asking for their transfer. A large number of such orders have already been filled, and it is expected the removal of the patients will begin next week. Blank forms can be obtained at the city office, Room 28, Mechanics Institute, or from Dr. Burgess at the Hospital, and friends wishing transfers made should lose no time in obtaining and filling them up.

Although much has been done at the new institution, much still remains to be done, but in a year or so it is to be hoped that it will rank among the foremost of our American asylums for the beauty of its surroundings and the good results accomplished.

THE JOHNS HOPKINS HOSPITAL.

In the year 1873 Mr. Johns Hopkins, a wealthy banker of Baltimore, handed over to trustees, whom he had himself selected, a lot of land in Baltimore, together with a very large sum of money, for the purpose of building a hospital, which, to use the founder's words, "shall, in construction and arrangement, compare favourably with any other institution of like character in this country or in Europe." The trustees were not hampered by any selfish restriction, such as too often mars the good effect of modern benefactions. They were to build a hospital which was ultimately to contain 400 beds, and to effect this purpose they were to obtain the assistance of "those at home and abroad who have achieved the greatest success in the construction and management of hospitals." In addition to the hospital, a Home for Orphan Coloured Children was also to be established. The three-

fold purpose of a modern hospital was specially mentioned in the letter in which Mr. Hopkins announced his gift. His hospital must relieve the sick, educate physicians and surgeons, and train nurses. With this commission the trustees have spent the time from 1873, when the money was made over to them, up to 1889, when the hospital was opened to the public, in carrying out the wishes of the donor. No one who reads the description of the hospital, recently published, can fail to accord them the credit of having faithfully fulfilled the object of the trust. The hospital has been constructed under the superintendence of several experts, of whom Dr. Billings has been the guiding spirit. We have no space to enter into a description of the magnificent structure. We can but advise the reader to go to Baltimore and see for himself, or else peruse the description, of which Dr. Billings is the author. He will there find the plans of all the buildings, as well as photographic reproductions of both the outside and inside of the various wards and pavilions.

Johns Hopkins' gift has done good in a manner which even he, far-seeing as he was, did not expect. The building of his hospital is an epoch in the history of hospital construction. Its successes or its failures will be of service to the builders of other hospitals, and we venture to predict that for generations the building of no hospital will be undertaken without the experience and example of the Johns Hopkins Hospital being taken into consideration. The published description will form a standard treatise on hospital construction which is destined to find a place in every library of reference in the civilized world.

Medical Practitioners under the Old Regime.—Etienne Bouchard, who came to Canada in 1653, was the first surgeon to settle in Montreal. According to Parkman, in 1702 there was but one educated medical man in the whole country, Sarrazin, who was a famous naturalist as well as a physician, and who left his name to the botanical genus *Sarracenia*, of which the curious American species S. purpurea, the pitcher plant, was described by him. "His position in the colony was singular and characteristic. He got little or no pay from his patients; and though at one time the only genuine physician in Canada (Callières et

Beauharnois au Ministre, 3 Nov. 1702), he was dependent upon the king for support. In 1699 we find him thanking his Majesty for 300 francs a year, and asking at the same time for more, as he has nothing else to live on. Two years later the governor writes that as he serves almost everybody without fees he ought to have another 300 francs. The additional 300 francs was given him; but finding it insufficient he wanted to leave the colony. 'He is too useful,' writes the governor again; 'we cannot let him go.' His yearly pittance of 600 francs, French money, was at one time reinforced by his salary as member of the Superior Council."—Parkman, The Old Regime in Canada. Eleventh edition. Boston; pp. 366.

Government Measures Against Hypnotism.—As an outcome of the expression of professional opinion at the Birmingham meeting of the British Medical Association, a bill will be introduced into Parliament next session, the aim of which will be the restriction of the public performances of the hypnotic experiments which are now so much the fashion. There is no reason to doubt the evidence of mental experts to the effect that much injury is done to the health of the subjects of these public experiments.—(*N. Y. Medical Journal.*)

Medical Items.

—Dr. E. J. Bowes, final prizeman of the class of 1890, has been appointed surgeon to the Minnesota Iron Works, Soudan, Minn.

—The will of Sir William Gull, M.D., Bart., which was proved in the Probate Office a few days since at upwards of £344,000, is said to be the largest sum ever amassed by a member of our profession.

—The Medical Association of the District of St. Francis has elected the following officers:—President, E. D. Worthington, M.D.: 1st Vice-President, Thos. Larue, M.D.; 2nd Vice-President, F. J. Austin, M.D.; Secretary-Treasurer, J. O. Camirand, M.D.; Assistant Secretary-Treasurer, P. Pelletier, M.D.

A License in North Dakota.—According to the new law regulating the practice of medicine in North Dakota, no one will be allowed to engage in practice until he has passed an examination in all the primary and final branches. No one will be admitted to such examination until he has taken at least three courses of lectures of six months each. The examinations will be conducted by a Central Board, appointed by the Governor of the State. Dr. J. R. Logan (Trinity, '85) is Secretary of the Board, and Examiner in Diseases of the Eye and Ear and Nervous Diseases. Dr. F. N. Burrows (McGill, '85) is Examiner in Practice of Medicine. Dr. C. Maclachlan (Tor., '89) is Examiner in Obstetrics and Diseases of Women and Children. Dr. T. O'Brien (McGill, '84) is Examiner in Anatomy and Surgery. It will thus be seen that Canadians are well represented on the Board.—*Canadian Practitioner.*

Sir Andrew Clark on Hospitals.—At the sitting of the 31st July of the Committee of Inquiry of the House of Lords on the management of the London Hospital, Sir Andrew Clark, who was examined as a witness, stated that he was first connected with the London Hospital in 1853 as assistant physician. He considered that the shutting up of the out-patient department of a general hospital would be the greatest calamity that could happen to the public, and most disastrous to the art of medicine. It was absolutely certain that the art of medicine could not be learned by the reading of books or from lectures; it must be acquired by practical observation. His experience of out-patient departments was that they were little abused. The advantages which the public derived were greater than the disadvantages and the abuses of relief which had been spoken of. Every general hospital should have a lock ward. There was room for a larger number of male nurses than are now employed. He thought the medical education in London was about the most practical education given anywhere in the world. In a small school, however, like Charing Cross or Westminster, they could not give such a complete and extended course of chemistry as was necessary for a student. He attributed the large influx of students

to Edinburgh, as compared with the small proportion to London, to the examinations in London, which were so complicated that the examiners even could not answer some of the questions. No honest, straightforward reading would ensure a student success; his only chance was that he might have the good luck to fluke through. Such a thing did not occur in the Edinburgh University. It was a good plan to have a resident physician in hospitals, but if kept for more than five years he became a nuisance. He should be a paid officer—not a member of the staff, and not under the control of the staff. As regarded the nursing, both day and night, in the wards of the London Hospital, which he controlled, it was as nearly perfect as he could expect to get in any institution. He was most strongly in favour of general hospitals with schools, as opposed to special hospitals, of which he had painful experience in regard to the conduct of those who officered them. He had no desire to cast reflections upon anybody, but his first objection was that they magnified the complaints with which they had to deal. If there were a hospital for the great toe, the discoveries of diseases connected with the great toe and the literature that would be published on the subject would be most appalling; but if this work were done in a special department of a general hospital you would have security for the trueness and thoroughness of it. He would except the Cancer Hospital and the Moorfields Hospital. He thought cases of consumption should either be treated in a special ward attached to a general hospital or scattered through the wards.

THE

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Original Communications.

TEMPERATURE IN THE PUERPERAL PERIOD.*

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Professor of Obstetrics, McGill University.

We are living in an age of great scientific activity and progress—hosts of workers in the laboratory and at the bedside, with microscope test-tube and instruments of precision, are testing, trying and proving. Old doctrines and beliefs venerable with the traditions and authority of ages are being rudely overthrown, old methods revised, and everything brought to the crucial test of observation and experiment ; meanwhile the general professional mind is kept in a state of unrest, sometimes even of positive bewilderment. It is well, therefore, once in a while, to cry a halt and review the field, count up our gains and losses, note what is being done in other departments, see how it tallies with our own results, correlate the new knowledge with the old, and estimate its influence upon our beliefs and practice. Believing that an attempt to review the whole field of obstetrics in the short time at my disposal would be unsatisfactory as well as unprofitable, I have selected as the subject matter of this address the temperature of the puerperal period. I have chosen this subject partly because it is suggestive, and partly because general notions respecting it are often hazy if not erroneous, and the practice founded thereon is sometimes uncertain timorous and procrastinating, at other times rash and injudicious. Before

* The address in Obstetrics delivered before the Canadian Medical Association, at Toronto, 10th September, 1890.

we can understand the abnormal and pathological, we must have clear ideas respecting the normal and physiological.

During *gestation*, the temperature is usually the same as in the healthy non-pregnant state. Although Lehman and others have stated that there is elevation of temperature during the last four months of pregnancy, later observations show that such elevations are the rare exception, not the rule. This question has been recently pretty thoroughly worked out in the Budapest University Klinik.* In healthy pregnant women, the average temperature during the last four months was found to be—

3 A.M., . .	97.02°	Average 98.47°
8 A.M., . .	98.78°	
12 . .	98.64°	
6 P.M. . .	98.71°	

At the *beginning of labor* the temperature is normal, but rises as labor progresses. It rises higher in *primiparæ* than *multiparæ*, higher in *difficult and protracted* than in *short and easy* labors, higher when the *second stage* is difficult and prolonged. The Budapest observations give the following:

In labors of less than 12 hours, . . .	98.8°
" " more " " . . .	99.0°
" when 2nd stage lasted 1′–15′,	98.76°
" " " 15′–60′,	98.98°
" " " over 60′,	99.03°

Regular labor	Primiparæ, 98.89°	Aver.	Primiparæ, 99.07°
	Multiparæ, 98.73°		Multiparæ, 98.84°
Irregular labor	Primiparæ, 99.56°		
	Multiparæ, 99.12°		

Temperature of 1st day.—As we have just seen, the temperature rises during labor and reaches a point more or less high, according to the length and severity of the labor. After the conclusion of labor, it rises steadily, then falls. Broadly speaking, it may be said that there is

1—A rise during the first 12 hours.
2—A fall " second "

It rises higher in primiparæ than multiparæ, higher after irregu-

* Archiv fur Gynäkologie. Band xxxii, Heft 3.

lar than after regular labors, and the higher it rises the longer it takes to fall to the minimum.

In multiparæ it reaches its maximum in 6–7 hours after the birth of the child, then falls uninterruptedly for 10–12 hours, so that

Max. is reached in 6–7 hours after birth,
Min. " 16–19 " " "

This rise and fall of temperature after labor is modified by the usual *diurnal* rise and fall (*i.e.*, rise during the day and fall during the night), so that the actual temperature of any given case is really the resultant of these two temperature curves. It is evident therefore that the temperature of the first day hinges upon the time of day when labor terminated. If the twelve-hour rise which follows labor coincides in point of time with the normal daily rise, the temperature may run up to 100° or even 101°, but if it is met and counterbalanced, so to speak, by the daily physiological ebb, there may be little or no observable elevation of temperature. This may be tabulated as follows:

In births from 5 *a.m. to* 2 *p.m.* the rise is most marked. The temperature usually runs up 1°–2° and reaches its *max.* about 5 P.M., when it begins to fall and reaches ifs *min.* about midnight. Births at 2 P.M. show the highest temperature,—101.4° has been observed by 5 P.M., the *min.* not being reached till the next morning.

In births from 2 *p.m. to* 6 *p m.* the rise is growing less marked.

In births from 6 *p.m. to* 4 *a.m.* the ebb is encountered and the rise is very slight.

In a general way it may be said that [rise.

Births during the night are generally followed by little or no
" " " day are generally followed by marked rise.

During the first day the normal limits may be set down as 98.5° to 100.5°.

From the 2*nd to* 8*th day*, the temperature follows the ordinary physiological course, the average temperature from day to day varying only .11°–.56°F. It is important, however, to remember the diurnal variation when estimating the significance of any given temperature. There is a daily variation between the

maximum and minimum of 1.2°–1.4F. The course of the daily temperature is as follows : it rises from 4 A.M. to 10 A.M., remains tolerably constant (with slight rise after meals) till 6 P.M., then falls steadily till midnight, and remains at the minimum till 4 A.M., when it begins to rise once more.

Max. temperature = 10 A.M.
Min. " = 12 midnight.
Average " = 6 A.M. and 8 P.M.

To get the average temperature of the day it should be taken at 6 A.M. and 8 P.M., or if taken at other times allowance must be made. If great accuracy is required and four observations can be taken, they should be made at

2 A.M.
8 A.M.
2 P.M.
10 P.M.

$$\frac{8\text{ A.M.} + 10\text{ P.M.}}{2} = \frac{2\text{ A.M.} + 2\text{ P.M.}}{2}$$

The chief points respecting the normal temperature may be summarized as follows :—

1. The temperature of a healthy pregnant woman is the same as in the healthy non-pregnant state.

2. Labor raises the temperature, the amount of rise depending upon the length and severity of the labor, and particularly of the second stage. The rise is greater in primiparæ than multiparæ—greater in irregular than in regular labors.

3. In the first day, the temperature rises for twelve hours after the birth till it reaches the maximum, then falls for twelve hours till it reaches the minimum. The height to which it attains depends chiefly upon the time of day when labor terminates. The rise is greatest in labors which conclude during the day, least in those which conclude during the night.

4. From the 2nd–8th day there is a variation of less than $\frac{1}{2}°$ in the average temperature from day to day ; but each day there is a difference of 1.2° to 1.4° between the maximum and minimum of that day. The average temperature is observed at 6 A.M. and 8 P.M., the maximum at 10 A.M., the minimum at midnight.

Pulse.—Although scarcely in the limits of my subject, it may

be of interest to state briefly the course of the pulse during the puerperal period. While the temperature begins to rise immediately after labor, the pulse begins to fall, and keeps falling steadily for eight days, at the end of which time it is 9–10 beats per minute slower than at the conclusion of labor. Beginning at 61 it falls to 50–51. This slowing down is equally well marked in multiparæ and primiparæ. Like the temperature, there is a diurnal variation in pulse curve, which is on the average 17.

Pulse is slowest at midnight, when temperature is lowest.

" quickest at 8 A.M. Like the temperature it rises after meals.

From the observation of 2,000 consecutive cases in the Marburg klinik, Ahlfeld found that 68.8 per cent. recovered without rise of temperature beyond the normal limits. In private practice the proportion of non-febrile cases should be at least 80 per cent. We have no exact data by which we can determine what the rate of morbidity in private practice really is, but it is far higher than it should be. Few practitioners use the thermometer as a routine practice in their obstetric work, and without systematic thermometric observations, statements respecting the presence or absence of fever after confinement have no scientific value. Some men never have perineal tears in their practice, and some never have fever in their puerperal patients; but in both cases the explanation is simple—they never really look for such things.

Causes of Fever.—When febrile symptoms do occur, to what are they attributable? Some men find an all-sufficient cause in the so-called milk-fever—for do not the laity accept milk-fever as a good and sufficient reason for almost anything from a cracked nipple up to a phlebitis or septic peritonitis—and have not the old nurses many a blood-curdling tale to tell of the dire effects of milk when it goes to the legs, the womb, or the brain. In well-regulated hospitals where exactness of observation is possible and the surroundings and treatment of patients are under thorough control, it has been proved over and over again that lactation is a physiological process whose establishment is unattended with fever. Occasionally in nervous, high-strung

women a rapidly-filling breast becomes engorged and tender, and there is a sudden rise of temperature ; but in such cases the rise is only temporary and yields at once to appropriate treatment. In hospital practice, since we have learned to seek the cause of mastitis in the absorption of septic matter through abraded nipples, or in irregular, inefficient or imprudent nursing, and have adopted preventive measures accordingly, swelled inflamed breasts with fever are becoming far more uncommon.

A rational treatment of fever must be based upon clear ideas regarding its etiology. We must do away with venerable old myths and grasp the fundamental fact that the normal temperature curve during the puerperal period differs very little from that of health,—that lactation is a physiological process which should not be attended with fever, and that when febrile symptoms do occur, their explanation must be sought in some pathological condition, not in the establishment of a physiological function.

What, then, are the causes which produce fever in the puerperal period ? For convenience of consideration, we may divide all febrile conditions of the puerperium into

Infectious and Non-Infectious.

Infectious.—In the great majority of cases, fever is the result of wound infection. Living ferments are introduced from without through abrasions or lacerations in the genital tract. The action of the microbes may be direct (destruction of tissue or mechanical obstruction) or indirect (producing leucomaines, the absorption of which is followed by rapid and powerful toxic effects). It is an error, very prevalent and very injurious in its influence upon practice, to look upon slight febrile movements as only *ephemeral* fever of no special significance or consequence, and to think of septic absorption only when dangerous constitutional symptoms are present. We should try to realise that septic wound-infection may be either benign or malignant, and may cause symptons either mild or severe. In two cases, one mild the other severe, the morbific agent may be the same, but the difference in the course and severity of the attack lies in the

amount or intensity of the poison absorbed, and the resisting power of the organism. Experience proves that smallpox, diphtheria or scarlatina may be sometimes so mild as to be scarcely recognisable, at other times so malignant as to destroy life in a few hours. Yet the nature of the poison is the same in both cases, and the mild case may spread the disease in a malignant form to others. So in like manner cases of septic wound-infection may vary greatly in intensity, though produced by the same poison, developing and propagating the same poison, and the danger of infection may be as great from the mild as from the severe. If we continue to regard all mild febrile disturbances as ephemeral fever, or milk fever, and only the severe cases as septic wound-infection, we can not expect to work out a rational treatment founded on a scientific basis. How often we notice in scarlatina epidemics that the first couple of cases in a ward or family are slight—the first mutterings of the storm—and then suddenly a child is stricken down with the malignant form. The infective agent, mild at first, seems to concentrate and gain intensity and power as it spreads. So in hospital practice we find that several cases of moderate fever, with, perhaps, a little parametritis, usually precede the general outbreak. If the true state of affairs is realised and the warning heeded, prompt measures may avert disaster. I believe the same thing holds good in private practice ; careful observation would show that there have been moderate febrile symptoms among the patients attended by certain physicians or nurses before the onset of more general trouble in their practice.

How, then, does septic wound-infection occur? Through the numerous traumatisms in the genital tract which result from labor, micro-organisms, chiefly streptococci and staphylococci, either enter the system directly or else lodge in clots, shreds of membrane, fragments of adherent placental tissue ; they multiply rapidly, generating poisonous matters which are readily absorbed and produce severe constitutional symptoms. The microbes are brought in contact with the open surfaces by the air or by means of the physician's and nurse's hands, foul instruments, utensils, clothing, sponges, dressings, etc. Traumatisms, shreds,

clots, placental fragments, may all exist in the genital tract without danger to the patient unless and until the infective microbes gain entrance. In a case recently reported, the placenta remained in utero for twenty-five days after an abortion without undergoing decomposition or causing systemic infection. For septic wound-infection the presence of infective microbes is essential. But such micro-organisms do not exist normally in the uterus and upper portion of the vagina, nor are they found in the normal lochial discharge ; they must be introduced from without. I have said that they may be carried in the air ; but in such a case the air must be in close communication with a foul closet or some such focus from which it derives its infective power. Infective microbes do not appear to be propagated through the ordinary atmosphere. At any rate we cannot excuse ourselves by throwing the blame on the air. It is as much our duty to see that infected air is excluded from the genitals as to see that hands, instruments and utensils are properly disinfected.* There is much useless wordy warfare going on about *auto-infection.* The confusion arises mainly from different writers attaching different meanings to this term. Without going into the question, we may safely say that if *auto-infection* means *spontaneous infection*, there is no such thing. We cannot shirk our responsibilities by playing upon words. Puerperal women do not generate septicæmia spontaneously, nor do they get it from the normal atmosphere. They are infected from without, and it is our duty to guard against such infection.

Time will permit only a hurried glance at the commonest varieties of septic fever.†

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* The secret of success in obstetrical as well as gynæcological or general surgical operations lies in the care with which the operator and assistants cleanse themselves. Dr. Parkes of Chicago has just reported (*Amer. Journal Med. Sciences*, Sept. 1890) a series of thirty abdominal sections with a mortality of only four. These sections were done in the public clinic-room before several hundred students. Great attention was paid to the immediate surroundings of the patient, and Dr. Parkes says : " My own belief, which I have put in force so far as these thirty cases are concerned, is that it is what is put into the abdomen which causes trouble, and also that it is the preparation of the operator and his assistants and of everything that touches the patient about the wound from which safety comes."

† A number of charts were exhibited and explained, illustrating the temperature curve in the various conditions hereafter mentioned. These charts are too numerous to reproduce.

Vulvitis and Vaginitis—the diphtheritic form being the most serious. The first symptom is a rise of temperature, sometimes preceded by a rigor. It usually begins about the 2nd or 3rd day, sometimes on the 1st, and rarely as late as the 6th–7th. Generally the temperature rises gradually, but sometimes it jumps at once to 103–104°. It has no typical course, but is usually higher in the evening. The pulse is rapid and weak, the respiration quickened. The uterus is generally involved, the lochia scanty and offensive. Diphtheritic patches may appear on the 3rd–7th day of the puerperium.

Endometritis and Metritis—may be simple or diphtheritic. The degree of fever depends upon the severity of the infection and the promptness of treatment. If the inflammation spreads to the tubes and ovaries, salpingitis and öophoritis occur.

Cellulitis (parametritis) and adenitis, ushered in by a chill, followed by rise of temperature. At the same time pulse and respiration accelerate. The height and duration of the fever depend upon the severity of the attack. Locally there is swelling of one broad ligament, and if the inflammation spreads the uterus soon becomes fixed. Resolution or suppuration.

Lymphangitis—may arise from either the vulva or uterus. If *vulvar*, infection has taken place through a sore in the vulva or lower fourth of the vagina, and the superficial inguinal glands swell. There is fever, rapid pulse, with general and local symptoms. If *uterine*, there is pain in the lower abdomen and the uterus is tender, especially at the cornua. The inflammation is not dangerous as long as it is limited to the uterus, but it is very apt to spread to the peritoneum and cellular tissue. The height and duration of fever depend upon the extent and severity of the inflammation.

Peritonitis—may be *local* or *general*. There is a *chill*,—a sudden rise of temperature to 103–104°,—severe constitutional symptoms set in. The symptoms of general peritonitis are graver than those of the local variety. This is one of the most dangerous of puerperal diseases. The pulse may run 120–160, respirations 26–56, tympanitis, etc. The inflammatory action is liable to involve other serous surfaces, and pleuritis, pericarditis may appear, or pneumonia, endocarditis, phlebitis or arthritis.

Acute Septicæmia—Common in old times, in epidemic form, in lying-in hospitals. Soon after delivery there is an acute rigor, temperature runs up rapidly and either remains very high or sinks below normal, the pulse is rapid and feeble, the face anxious and pinched, tongue dry and brown. Death in a day or two, or within a week.

Thus, in the group of febrile affections due to infection by microbes or their products, we have more or less rapid rise of temperature, a more or less continuous duration of the same, with rapid pulse, quickened respiration, and other constitutional symptoms. Occasionally there is subnormal temperature, but then there are signs of profound prostration. Sometimes chills followed by fever recur every two or three days, indicating fresh periods of absorption.

Besides septic wound infection, many other causes may elevate the temperature. During the puerperal period pre-existing febrile conditions are aggravated and dormant tendencies roused into activity.

Lung Affections.—Phthisis may advance rapidly after labor and give rise to symptoms which might be readily mistaken for septic mischief.

Pneumonia, *pleurisy* or *bronchitis* may underlie the fever, and for a time avoid detection.

The *exanthemata*, *diphtheria*, *erysipelas*, *malaria*, *rheumatism* may precede, complicate or follow labor. They may have been incubating at the time of labor and only manifest themselves during the puerperium ; in fact such diseases are apt to precipitate labor. The effect of labor upon febrile cases is generally more or less disastrous,—the pain, violent muscular effort, interference with respiration and circulation, and the loss of blood are apt to produce a condition not unlike surgical shock. The temperature falls below normal, the pulse becomes quick, irregular and feeble, there is cold, clammy sweat, and great exhaustion. There has been great difference of opinion as to the effect of the exanthemata, diphtheria and erysipelas upon puerperal women. Some maintain that *scarlatina*, for instance, is always the classical scarlatina with its typical rash and sore throat, modified, perhaps, but still quite easily recognisable as scarlatina. Others

hold that the scarlatinal poison produces a malignant form of puerperal fever undistinguishable from septic wound-infection and quite different from ordinary scarlatina. As a matter of fact both appear to be right, and a study of clinical facts reconciles conflicting opinions. If the specific poison enters by the ordinary channels (scarlatina and diphtheria through throat and lungs, erysipelas through the skin), the symptoms and course of the subsequent disease will differ but slightly from its usual type in the non-puerperal. But if the poison enters through wounds in the genital tract, a totally different train of symptoms will be observed, resembling septic wound fever of great intensity. The manner of invasion seems to modify profoundly the course of infective fevers.

Non-Infectious Fevers.—Emotional disturbances may undoubtedly produce elevation of temperature ; the rise is generally rapid and unexpected, sometimes extreme, and the fall is usually as sudden as the rise. Whatever may be the exact explanation of its *modus operandi*, it is certain that profound psychical impressions such as grief, anger or fear clinically cause elevations of temperature. If the cause is transient, the fever will be transient ; if recurrent, the fever will be recurrent ; if persistent, the fever will be persistent. In hospital patients, where the irritability of organism and impairment of mental control usual to the puerperal state are intensified by the miseries inseparable from illegitimate maternity, such emotional temperatures are frequently to be seen. Anxiety about the future, the non-receipt of a letter, may run the temperature up to 104° or 105°.

Exposure to cold.—The diminished vascular tension after labor promotes perspiration and a general relaxed condition, in which chilling of the surface readily occurs. Exposure to the draught from an open window, falling asleep with neck and shoulders uncovered or with the child at the breast, or imprudently getting out of bed insufficiently clad, may cause a severe febrile attack.

Reflex irritation.—In primiparæ of sensitive, nervous organisation, high fever may follow the engorgement and distension of the breast without suppuration.

Digestive disturbances may perhaps be included in the same category. Food improper in quality or quantity, constipation, acute indigestion, may all cause temporary rise of temperature.

From what I have said, it is evident that there are a great many causes which may produce fever in the puerperal period. The proper differentiation of these causes, so as to arrive at a just diagnosis and rational treatment, is sometimes by no means easy. A high temperature may mean a great deal or it may mean nothing ; a thermometric diagnosis is impossible. As septic infection is our great bugbear in obstetric practice, it is perhaps natural that we should immediately think of septicæmia when we are confronted with a febrile temperature. But we should be very careful to exclude all other possible causes before we declare finally for septicæmia and begin radical intrauterine treatment. And how many practitioners now-a-days go to one extreme or the other, either pooh-pooh sepsis and antiseptic treatment altogether, or else (ever haunted by Banquo's ghost) see sepsis lurking behind every rise of temperature. The one extreme begets passive expectancy—the other restless, fussy meddlesomeness. With clearer ideas and broader views our attitude should be calm and confident, our treatment rational.

Of the practical lessons which may be drawn from this subject, the first and most important is *the absolute necessity of rigid antisepsis as a routine practice* if we would secure the best results. If a man is to derive the full benefit from antiseptic theory and practice he must believe in it, he must use it in all cases—in the beginning as well as at the end. To be careless and slovenly while all goes well and then fly to stringent antiseptic measures when things begin to go badly, will not secure the best results. The more a man practises according to antiseptic principles, the more skilful will he become in its details and the greater will be his success. Antiseptic measures often fail because they are ignorantly or unskilfully employed. Here, as elsewhere, practice makes perfect. What are the most important details of prophylactic antiseptic practice which a man should use in his daily practice ?

1. Prepare for a case of labor as you would for a major sur-

gical operation. You would not imperil an operation by uncleanliness of person, instruments or appliances. Why should you take greater risks in a case of labor?

2. Prepare the field of operation. A general bath is advisable, but in private practice is not absolutely necessary. Whenever possible the vulva, perineum and lower abdomen should be thoroughly scrubbed with soap and water and then bathed with sublimate solution 1×1000. Streptococci are not unfrequently found plentifully in the folds and about the hair of the genitals. During the second stage of labor give a prophylactic sublimate douche 1×2000, to clear away microbes which may be in the vagina. The prophylactic douche is not necessary in private practice unless there has been leucorrhœa or irritating vaginal discharges, or suspicion of gonorrhœa.

3. Thoroughly disinfect hands, instruments, etc., which are brought in contact with the parturient canal, and see that no sponges or old syringes, bed-pans or utensils are used about the patient.

4. Vaginal examinations should be made as seldom as possible and last as short a time as possible. Lubricants are unnecessary and apt to do injury. The finger should not be carried into the uterus unless for some special purpose. Diagnosis of position is far better and more safely made by external palpation. In hospitals where vaginal examinations have been almost wholly suppressed, febrile disturbances are rare. The pernicious practice of keeping the finger in the vagina during the second stage, manipulating the os and stretching the perineum, cannot be too severely condemned. A douche should immediately follow the vaginal examination.

5. After the completion of the third stage, a careful examination should be made of the vulva, vagina and perineum in a direct light. If lacerations exist about the perineum vestibule or lateral vaginal wall, they should be brought together with stitches. Large abraded surfaces may be cleansed and dusted with iodoform, or brushed over with iodine. In maternity hospitals where minute care has been taken to close tears of the vaginal walls and cauterise abrasions, metritis, endometritis and parametritis have almost entirely disappeared.

6. Thorough cleanliness and the use of the antiseptic dressings throughout the whole puerperal period. Routine douching throughout the puerperium is unnecessary and unadvisable if proper care has been taken during and immediately after labor. Corrosive sublimate seems to be the most efficient agent for disinfecting the hands and douching the vagina. Dr. Boxall has recently made a valuable communication to the London Obstetrical Society giving the results of seven years' practice in the General Lying-in Hospital, London. He finds a great improvement in results since the introduction of antiseptics, but remarked that febrile cases increased whenever sublimate was given up for carbolic acid, Condy, creolin, or salufer, and decreased again when the routine use of sublimate was re-established. He found also that when weak solutions of sublimate were in use fever increased, but declined once more when they returned to the 1×1000 for external and 1×2000 for internal application.

If a man carries out antiseptic measures in his midwifery practice as a routine, he need seldom feel alarm when febrile symptoms appear during the puerperium, for he will generally discover the cause to be other than septic wound infection. But if he does not adopt such measures, he will always be in a state of uncertainty and doubt when fever appears. Let me urge upon the Association the advisability of more careful observation of their cases after confinement. The thermometer may be the first and at times the only external evidence of inflammatory mischief internally. A slight parametritis which would disappear after a few days longer rest in bed, may be lighted into fresh activity by getting up too soon ; the thermometer would probably call attention to the existence of such a parametritis. In a word, we should treat our obstetric cases in a more scientific manner and upon surgical principles. The wounds are hidden and the ill-effects of slovenliness and inattention may not be for the moment as apparent, but they are none the less real. Gynæcologists tell us a sad tale of the miseries and sufferings of women from neglected inflammatory troubles traceable to confinement, miseries and sufferings which are quite preventable. Such a

record is not creditable to us. We should not merely be content that our patients recover, we should be seriously concerned as to *how* they recover. And surely if a little timely care and attention will secure them comparative immunity from distressing ailments which render life a burden, it is our bounden duty as humane men and intelligent physicians to realise our responsibilities and adopt every reasonable precaution.

APPENDICITIS.*

By George E. Armstrong, M.D., Montreal.

Mr. Chairman and Gentlemen,—During the past few years the attention of the profession has been directed to that morbid condition which for a long time has been designated by the term typhlitis, with one or two prefixes suggested by Musser. Able original articles have appeared from the pens of Treves, Fitz, Weir, McBurney, Senn, Bull, and others, which have thrown much light on its pathology, morbid anatomy, and etiology. Numerous cases have also been reported by practitioners in different parts of the country. Notwithstanding, there is still a considerable difference of opinion among representative surgeons in regard to several points in connection, chiefly, with the diagnosis and treatment, especially on that all-important question, the time to operate. And among general practitioners I fear there exists still more vagueness which might with profit to doctor and patient be cleared up. When so important a subject as appendicitis and its sequelæ occupies this doubtful position—a condition which calls for the most acute medical and surgical skill, and one that needs to be approached in the most prompt and decided manner—I think it proper that all those having any experience in it should bring it forward and pool it, so to speak, that all the evidence from all possible sources bearing on this malady may be analysed, sifted and arranged until more certain and definite data and guides are established, to enable us all to meet these cases and bring a larger proportion of them than at present to a successful issue.

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* Read before the Canadian Medical Association, at Toronto, September, 1890.

I think the following oft-reiterated and generally accepted statements may be accepted as true :

I. That the cæcum and appendix, as first pointed out by Bardeleben in 1849, are entirely surrounded by serous membranes and are therefore intra-peritoneal.

II. Primary infiltration of cellular tissue in right iliac fossa is unknown. (*Treves.*)

III. There is no evidence of the existence of an infiltration of walls of cæcum other than that caused by a catarrhal infiltration or ulceration of its mucous membrane, the most common forms of ulcer being the stercoral, typhoid, tubercular, and perhaps syphilitic.

IV. The symptoms of a catarrhal infiltration of mucous membrane of cæcum are those of a colitis rather than typhlitis, and ulceration of cæcum does not give rise to symptoms of typhlitis unless the peritoneal covering becomes involved.

I have tried to get from the Department of Agriculture at Ottawa definite information as to the number of deaths in the principal cities of the Dominion during the year 1889, but although the mortuary tables contain all through the year space for the mention of deaths from worms, the term peritonitis was not mentioned.

The first and perhaps one of the greatest difficulties in treating this disease at the bedside is the mildness, obscurity, and often misleading character of the symptoms, rendering a positive and precise diagnosis difficult and too often uncertain. The onset is sudden ; colicky pain in abdomen, often diffuse, with more or less sensation of chilliness, are usually the first symptoms. Vomiting may be present or not. Generally not more than the usual degree of constipation. Probably a loose condition of intestinal contents would favour the entrance into the appendix of any small body, as seeds.

In a certain number of cases nothing more serious than the foregoing occurs, and in a few days the patient is well again. But oftener, I think, it will be found that on the second day of the attack the colicky pain will have become more severe, tenderness on pressure increased, and becoming greater in the

region of the appendix than elsewhere. This general and diffuse pain and tenderness so often present in the early stage is one of the misleading characters. In fact, in one case occurring in Montreal the pain was all referrod to the left side, although due to disease of the appendix. Why this should be so I cannot tell, but it certainly is the case in a great many instances that neither pain or tenderness are localized during the first twenty-four or thirty-six hours of the attack, and this fact should be borne well in mind. Neither is the temperature to be much relied upon. As a rule there is elevation of temperature ; it may reach 100 or 102°F., but cases are on record of a normal temperature co-existent with a considerable collection of pus around appendix. In fact, as stated by Gill Wylie, a little pain and tenderness on pressure in right iliac region may be the only symptom present to indicate the presence of a pint of stinking pus ready to break into the general peritoneal cavity, there to set up a septic peritonitis that may prove fatal in twenty-four or forty-eight hours. As an example of the mildness and misleading character of the signs in some cases, I will very briefly give you an outline of one occurring in my practice a short time ago.

Miss T., aged 21½ years, a medium-sized, well-nourished girl, unmarried. Saw her on the 5th June, 1890. She complained of abdominal soreness. It was her time to menstruate. She suffered severely from dysmenorrhœa. Told me that the day before she had had a good deal of pelvic and abdominal soreness, but not more than she usually felt during her menstrual period. The day before had been wet and very cool, and clad in very light summer clothing she had spent the day on St. Helen's Island. On her return home in the evening, wet and chilled, she found herself unwell, but in a few hours the flow ceased and she had suffered from pain and vomiting during the most of the night. At the time of my visit she was feeling less pain, which was referred to umbilical region. There was no localized tenderness on pressure to be made out either in right iliac region or elsewhere, although carefully looked for. Temperature in axilla 100.5°, and pulse 100. No menstrual flow. During the next three days there was no augmentation of any of the symptoms.

In fact, so far as physical signs and subjective symptoms indicated, my patient was improving and suffering less each day than she had the day previous. On the 8th she was particularly comfortable and cheerful; bowels moved freely; only a little soreness remained in right iliac region. On the 9th I was astonished to find great increase of pain and tenderness, marked tympanitis, bilious regurgitation from stomach, a pinched expression of face, temperature 104°, and pulse 140. I lost no time in getting assistants and instruments, and opened the abdomen by a median incision. I then found general septic peritonitis, peritoneum red and in some places dark and lustreless, lymph and pus in quantity, and on reaching the appendix found it perforated, the opening being occupied with a fæcal concretion the size of a large bean, a similar one having escaped into the general peritoneal cavity, and two others remained in the appendix. Although I washed thoroughly and secured free drainage, death followed in a few hours after she was returned to bed. During the inflammation of the appendix the pain and tenderness had not been confined or at all referred by the patient to the region of the cæcum, and neither objective nor subjective symptoms had indicated the existence of a severe disease. No attempt, judging by the condition found at the operation, had been made to shut off the inflamed part, and when rupture occurred the fæces escaped at once directly into the peritoneal cavity.

In this case, on the fifth day, the temperature was normal; pulse 76, soft and compressible. No pain when lying quietly, and very little tenderness on pressure, bowels moving freely. Expression good and everything apparently progressing favourably, although only twenty-four hours elapsed between this condition of comfort and my finding a most intense form of septic peritonitis, a black, almost gangrenous condition of intestine, with the peritoneum peeling off that portion of ilium nearest the cæcum. This case shows stronger than words the importance of the early recognition of the clinical significance of colicky abdominal pain and tenderness and the disastrous results that may follow a failure to appreciate their meaning, for there can be scarcely a doubt that had I operated on this girl twenty-four hours sooner she would be alive and well to-day.

I certainly believe that if, until we know better, we called all cases of colicky abdominal pain with tenderness and a little elevation of temperature, without other apparent cause, cases of appendicitis, and treated them accordingly, our patients would be gainers.

In another group of cases, the local peritonitis so completely surrounds and firmly encloses the inflamed appendix that the results of further changes in the tissue are prevented from contaminating the general peritoneum, at least for a time. In these cases a fullness can usually be made out with some degree of certainty either by external manipulation or per rectum, or both combined. Occasionally a suggestive œdematous condition of skin appears. It is in these cases more particularly that the exploring needle has been recommended and used. I have no experience with it except in one case, and would be afraid to use it, because a sharp point is thrust into the dark and might wound veins or intestine or ureter, and although a healthy gut may be, perhaps, pierced with impunity, I am positive that a gut distended for a time and its walls paralyzed from over stimulation of the plexus of Auerbach, as shown by Malcolm, cannot be pierced with impunity, because I have seen passing out of these punctures first gas and then liquid contents. Another objection to the use of the exploring needle here is that, if you find nothing, you have proved nothing. Even that accomplished surgeon Bull failed, in one instance, to find pus with the needle, but on cutting down immediately after came upon an abscess containing four ounces of pus.

I have tried in the foregoing to emphasize the disproportion between the symptoms present in some of these cases, sometimes almost an absence of symptoms, and the grave pathological condition which bears an etiological relation to them.

At the outset it is proper to try medical treatment. Rest in bed, local abstraction of blood by leeches, or strong counter-irritation, followed by hot fomentations, with the smallest quantity of opium that will ensure a fair degree of comfort to the patient, avoiding the administration of a quantity large enough to mask the symptoms and conceal from attendant and friends

the true condition. Avoid purgatives; the notion that the cæcum is a common seat of fæcal impaction has been shown to be an error, and, unless for good reasons, a mild, unirritating enema of warm water, repeated if necessary, is all that can safely be used.

Under this treatment the temperature may get lower and soon become normal, the pulse improve in quality, pain and tenderness lessen and finally disappear, and resolution takes place. In these cases generally a catarrhal appendicitis only has been present. The patient may have recovered perfectly, or, with apparent recovery, a damaged appendix may remain and be a constant menace of danger to the patient, exposing him to the danger of a recurrence at any time, and even to the danger of sudden perforation with its terrible results.

Apparent recovery in these cases, even the entire disappearance of pain and soreness and return to active duties of life, cannot be taken as a certain indication that the appendix is whole.

Mr. H., aged 31, married. First attack of catarrhal appendicitis, lasting fifteen days and ending in resolution, occurred in May 1888. During the two months immediately succeeding his recovery he suffered from pain in region of cæcum, recurring every week, beginning, as a rule, in the night and passing off the following morning. Gradually the intervals increased, but in the same ratio the pain became more severe and of longer duration. Then two or three months would elapse without pain. From February '89 to January '90 he only felt the pain once—viz., in April '89. On Sunday evening, in January last, he retired in apparently perfect health, and was awakened about 1 A.M. by pain in the abdomen of a most violent character. His sufferings were so intense that the nearest doctor was called. I did not see him until the Tuesday following. I found him lying in bed on his back, knees drawn up, abdomen tender and slightly tympanitic. An ill-defined mass could be indistinctly outlined as occupying a position in lower abdominal region between umbilicus and cæcum. Some vomiting. No motion from bowels since the previous Sunday. When at rest was comparatively

free from pain. Pupils contracted. I stopped opium and gave him salines. The temperature was 102 ; pulse 116. The following morning symptoms indicated the presence of some grave intra-peritoneal lesion. Bowels had not moved ; vomiting increased ; pulse rapid and weak ; temperature 103.5° ; features pinched, a haggard expression ; no pain but considerable tenderness ; moderate tympanitis. I decided that it was time to ascertain what I had to deal with, and being confirmed in my opinion by Drs. Perrigo and Spendlove, whom I asked to see the case with me, I at once opened abdomen by a median incision. At first sight only a little redness of peritoneum and distended condition of the intestines was noticeable, but on approaching the cæcal neighborhood ever so carefully I pushed aside some coils of gut when a free flow of stinking pus covered everything. Proceeding cautiously, sponging and washing away the matter, I finally found the ragged stump of an appendix, which had sloughed completely off. In the abscess cavity, the walls of which were formed by lymph binding together knuckles of intestine, I found a fæcal concretion of considerable size, having for a nucleus what resembled raspberry seeds. The opening between appendix and cæcum was completely closed, the stump very broad and short, and I left it as I found it. Thoroughly washed out peritoneal cavity and closed incision, providing free drainage by means of two glass tubes. In twenty-fours hours temperature fell to normal, and recovery was rapid and uninterrupted. He is now well and doing full work as a groom.

This case shows very clearly that recovery from an appendicitis is not synonymous with the restoration to a sound condition of the appendix. After a period of eleven months of almost perfect freedom from pain a perforation may take place and a septic peritonitis be lighted up almost in a moment and without the slightest warning. It shows also the necessity of surgical interference, and the very reasonable hope of a probable recovery that may be held out to patient and friends.

Mr. Mc—, aged 28, single, medium height, well nourished. While at work as a millwright on the Saguenay, in 1883, he was suddenly seized during the night with severe abdominal pain,

having its greatest intensity in the neighborhood of the cæcum. After suffering a week with little, if any, amelioration of symptoms, he came home to Montreal, where I attended him for what I diagnosed as a perityphlitis. He recovered in about ten days. Six months after this first he had another attack, lasting two or three days. For about two years after this he had attacks of recurring pains in right side of abdomen, lasting two or three days each time. The intervals gradually became shorter until latterly his pains returned with wonderful regularity every three weeks, and this in spite of the most careful dieting and regular living, supplemented by such medical treatment as two or three of my confrères as well as myself could suggest. His condition was a serious one, not only because of the suffering which it entailed, but also because he found it difficult to retain any very desirable business position, being compelled to absent himself about four days out of every three weeks, and, again, because I could give him no guarantee that his recovery would continue to be as prompt and complete, for between his attacks he was apparently perfectly well. For the above reasons he consented to submit to an operation. On the 5th March last, four days after last attack, I cut down upon the appendix by the lateral incision and found a thickened appendix curled up and adherent to the postero-lateral wall of cæcum, the tissues in the immediate neighbourhood being thickened considerably and matted together. Removed appendix, washed out the field of operation carefully, inserted two glass drainage tubes, and closed incision. Immediate recovery perfect, and up to date, six months since operation, he has remained perfectly well, having had no recurrence of pain whatever.

By the operation he has gained, so far, freedom from interruption in his business life, freedom from a pretty severe attack of pain and vomiting every three weeks, and *perhaps* escaped a more serious and possible dangerous illness.

I think I use the term appendicitis with reason, because in 257 cases of perforative appendicitis and 209 cases of typhlitis collected by Fitz, the cæcum was only perforated three times—once by a fish bone, once by a pin, and once from strangulation

of the bowel. In a series of 100 cases of perityphlitic abscess taken by Weir from the *Index Medicus*, the appendix was perforated eighty-four times, and inflamed and not perforated three times. And Treves states that in 25 cases of fatal typhlitis occurring in the London Hospital during the last few years the appendix was involved in all of them.

If, now, instead of resolution taking place, the inflammatory action spreads to the adjacent tissues, a localized peritonitis develops, and suppuration may follow or a perforation of the appendix, more rarely the cæcum, may ensue, after which the prognosis will depend upon a variety of conditions, most of which are not determinable during life. First, the completeness with which the infected area is shut off from the general peritoneal cavity. Secondly, the direction the pus takes. It must always be borne distinctly in mind that the whole trouble is primarily intra-peritoneal, and only secondarily extra-peritoneal, and the thickness or strength of the dividing wall cannot be diagnosed, so far as I know, during life.

If the abscess walls are dense, the contained pus may there remain, infecting the patient and producing pyæmia until death ensues. I am loth to confess that this occurred in two cases under my care, a number of years ago, before I knew or dared to carry out a line of treatment that would have given them a chance. I was not alone in the care of them either. One died on the 74th day and the other on the 29th day. An abscess behind the cæcum was found at the post-mortem in each case. In still another case I operated on the 24th day of illness, assisted by the late Dr. Howard and Dr. Perrigo, by lateral incision. Got readily down upon the sac and found it filled with bloody pus. I inserted a drainage tube through a comparatively small opening. After twenty-four hours the pus was free from bloody tinge. Patient died on the sixth day after operation.

Professor William Osler, then of Montreal, very kindly made the autopsy for me. He found an abscess behind and to the right of the cæcum. The veins had opened into the sac, and pus was traced through them to the portal vein and into the substance of the liver. The mesenteric glands were involved. No mention is made in the report of the condition of the appendix.

But in probably a larger number of cases the pus makes for itself an exit at some point, discharging externally, a fortunate termination, or into some hollow viscus, or too often, unfortunately, into the general peritoneal cavity, to be followed by immediate fatal collapse, or by an intense septic peritonitis which proves fatal in from three to five days. Of 67 cases collected by Bull, 8 burst into the peritoneal cavity, and the same occurred in 6 out of 12 cases collected by With. Of 8 cases occurring in my own practice, 4 ruptured into the general peritoneal cavity.

One of the most perplexing questions to attendant and friends is the time most propitious for operating. The public generally have a horror of the knife, and especially of opening the abdomen, and an erroneous and exaggerated idea of its danger, an idea well ground into them by our profession for many years.

In cases of recurrent appendicitis authorities are pretty well agreed that Treves' rule of operating a few days after the subsidence of the acute symptoms.

No such unanimity of opinion exists or seems possible at the present time as to the most opportune moment to interfere in severe acute cases. To select the third day as suggested by Fitz, or the fifth day of Treves, or to make an attempt to strike an average between extremes, is not at present feasible, and would, in individual cases, work mischief. Bull's dictum that the more rapid the development of the symptoms the earlier should the surgeon interfere is at least deserving of attention. Greig Smith, wisely I think, would make it imperative upon the surgeon to interfere as soon as the patient is palpably drifting into a condition in which the chances of recovery after operation are markedly diminishing; and he adds that consecutive evening temperatures for four or five days rising over 102° would seem to justify operation.

In all of my cases of primary appendicitis there has occurred generally about the third or fourth day a marked remission of all the symptoms, the temperature falling to normal or nearly so, with a corresponding improvement in pulse and other symptoms, but persistence of pain and tenderness, only to be followed by rapid redevelopment in twenty-four or forty-eight hours. If this remission is found to obtain as a general rule or in a large

percentage of cases, it might be made a rule to operate the moment acute symptoms began to show themselves after such a remission. If to the persistence of symptoms of local peritonitis for a day or two, or three or more, chilliness, profuse sweats, regurgitation from the stomach are added, operation should be undertaken without delay.

If a moderately well-defined local fullness can be felt externally or per rectum, it would call for operative treatment.

If there are present symptoms of acute septic peritonitis, and tubercle, traumatism and the puerperal state can be excluded as etiological factors, they may safely be counted due to the rupture of some hollow viscus or abscess, or other sac containing ichorous matter, and unless relieved promptly by surgical methods before shock is present the patient will almost certainly die. Delay in these cases is extremely hazardous, and too often in the past has the surgeon been called in when the patient was beyond the stage when operative treatment could be undertaken with any reasonable hope of success. And there is no reason for such procrastination. The operation itself at any stage of the case, if performed by a competent surgeon according to modern surgical principles, can scarcely do harm.

In regard to the operation itself I can testify to the ease with which one gets down upon the appendix by the lateral incision. If a tumour is distinctly felt, an incision a little to the inner side of it answers well. In some instances the operation is completed without entering the general peritoneal cavity. If it is opened it should be protected by large flat sponges. If pus enters, and it is desired, or if the case is one of general suppurative peritonitis, a median incision can be made primarily or after the lateral incision. If anywhere the rule that what is worth doing at all is worth doing well applies, it is here all puddles of pus should be thoroughly removed, and, so far as possible, the abdominal cavity made scrupulously clean and freely drained. In extreme cases continuous irrigation, as carried out by Penrose of Philadelphia, and favourably reported on by Greig Smith and Wylie, would seem to increase the chances of success.

Except in one case where it had sloughed off, leaving a broad

short base, I have always removed the appendix after putting a stout silk ligature around its base. I feel safer when it is away, although recurrence is said not to be common in cases where it is left behind, the inflammation seeming to effect the closure of its canal.

ON THE PRINCIPLES OF THE TREATMENT OF DIABETES MELLITUS.*

By F. W. Pavy, M.D., LL.D., F.R.S.

The first point to be considered in discussing the treatment of diabetes is the *rationale* upon which it should be conducted. A certain deviation from health resulting in the escape of sugar with the urine constitutes the condition that has to be combated, and something requires to be said regarding the nature of the deviation before we are in a position to approach the question of how it should be treated.

The observable phenomena are that, whilst in the healthy subject the food ingested is disposed of in such a manner within the system as not to lead to the exit of sugar from it, in the diabetic subject the food fails to be similarly disposed of, but in part passes out as unconsumed and wasted material with the urinary excretion. It is with the carbohydrate principles that the faulty action lies. These, instead of passing in the direction that results in their consumption and utilization and thus disappearance within the system, as occurs in health, do not follow such a course, but remain in the state of carbohydrate, and are eliminated as such. The chemistry of the body with regard to these principles is at fault. The proper changes do not take place to lead to their being employed as they ought to be, and thereby lost sight of. Represented in other words, through defective assimilative action these principles do not pass on, it may be said, to their proper destination.

Thus much is learnt by simply looking at the matter through the light of ingress and egress.

There is no theoretical consideration involved in stating that the carbohydrates in the system of the diabetic fail to undergo

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those right chemical changes which, in health, lead to their disappearonce, and that consequently, whether ingested from without, or formed from the splitting up of nitrogenous matter within, they become disposed of by egress with the urine.

It may further, I consider, be stated that, as a result of the faulty action, the carbohydrate, in the form of sugar, reaches the general circulation in a manner it ought not. No one with any ground of support can contend that the sugar eliminated is formed by the kidney. Whatever appears in the urine has previously existed in the blood flowing to the organ, and osmosis suffices to account for the escape that takes place. I am of opinion it has satisfactorily been made out that healthy urine contains a certain small amount of sugar, and this stands in accord with what is observed as regards the condition of the blood under natural circumstances.

With regard to the presence of sugar in ordinary urine, I conducted a series of observations some years ago in which I precipitated the sugar by means of lead acetate and ammonia, after previous separation of the uric acid by lead acetate alone. The compound of sugar and lead oxide was then decomposed by sulphuretted hydrogen and the sugar estimated gravimetrically by boiling with the copper test liquid, collecting the precipitated cuprous oxide, and subsequently by the aid of a galvanic current depositing the copper upon a weighed platinum cylinder. The amount found varied from ·096 to ·533 parts of sugar per 1,000 parts of urine.

The condition of the blood, as regards sugar, can be with precision defined by the application of the satisfactory analytical procedure which exists at our command. There is no difficulty, with the exercise of proper attention, in securing the full extraction of whatever sugar is present in a given specimen of blood, and afterwards expressing its amount. From a large number of observations I may state that the quantity of sugar in blood taken under natural conditions does not amount to more than from about ·5 to about ·8 per 1,000. Under deviations from the natural state the quantity may be quickly made to rise higher, and this, it may be said, should be borne in mind in looking at

results where larger quantities are mentioned by investigators as having been found. I have made analyses of the blood obtained from persons suffering from diabetes, and have a record of seven instances. A general agreement is distinctly recognizable between the amount of sugar escaping with the urine and that found in the blood. Taking one instance where 751 grammes of sugar where eliminated with the urine in the twenty-four hours, the blood contained 5·763 per 1,000; whilst in another with 27 grammes in the urine for the twenty-four hours, the amount in the blood was 1.543 per 1,000. These are the examples giving respectively the highest and lowest figures of the series, both for urine and blood. It is correct to state that the condition of the urine as regards sugar affords an index of that of the blood. This is only what might be expected, seeing that sugar is a diffusible substance, and that therefore in proportion to its presence in the blood so may it be looked for in the urine. As its presence to more than an exceedingly minute extent is abnormal to the urine, so the same may be said of the blood, and its presence in the blood to the extent occurring in diabetes means the existence of an unnatural state of this fluid, which induces a deviation from healthy action throughout the system. In proportion to the extent of this deviation from the healthy state—that is in proportion to the amount of sugar reaching the general circulation and thence passing out through the kidney—so will stand the measure of severity of the symptoms of diabetes. Looked at broadly it may certainly be stated that the larger the amount of sugar eliminated with the urine, the worse in every direction is the condition of the patient suffering from diabetes.

We thus trace the symptomatic phenomena of the disease to the abnormal condition occasioned by the presence to an undue extent of sugar in the general circulation.

Whence, it may be next asked, arises this abnormality? I must not enter too far into the discussion of this matter, but the question has a distinct bearing upon the basis of treatment, and therefore requires to be touched upon to a certain extent.

I doubt not it will be conceded by all that the object to be attained by treatment is to diminish the deviation from health as

far as practicable. It is only a rational procedure to endeavour to establish and maintain as close an approximation to the healthy standard as our knowledge enables us to effect. Observation shows that the amount of error as regards sugar in the blood, and, following upon this, sugar to be discharged with the urine, is in proportion to the amount of carbohydrate principles, of whatever kind, ingested. It may be said in general terms, without, as I have already stated, asserting anything outside the region of fact, that the nature of the error to be dealt with consists in a failure of the power in the system to dispose of the carbohydrates in a manner to lead to their utilization and disappearance. But now arises the question, To what kind of faulty action is this failure to be attributed. Two points of view present themselves for consideration. We start with the fact that sugar is present in the blood to an extent that is unnatural. Is this due to sugar reaching the general circulation in a manner that it ought not? Or is it to be regarded as natural that all the sugar eliminated in diabetes should reach the general circulation, the error consisting of its not undergoing subsequent destruction, thus leading to accumulation?

It would be out of place to discuss these propositions here. The view to be taken rests on physiological considerations. It is known that I have over a long space of time given close attention to the matter, and my experimental enquiries lead me decidedly to affirm that I consider the source of the sugar encountered in the blood and eliminated in diabetes to be attributed to its being permitted to enter the general circulation in a manner that it ought not. This view harmonises fully with the phenomena observed in diabetes. In health I would say the opportunity is not afforded for the ingested carbohydrates to appear in the urine for the reason that they are not permitted to pass through the liver and reach the general circulation. In diabetes, on the other hand, we know that they do reach the general circulation in the form of sugar, and from the amount of this principle to be found in the urine it can be stated that they must do so in proportion to the amount ingested. I would therefore say that we have here to deal with a failure of power—

assimilative, or whatever else it may be called—to arrest the passage of carbohydrates through the liver. Being thus permitted to reach the general circulation they are placed in a position to be discharged with the urine, and hence according to the amount of carbohydrate principles ingested so is the amount of sugar eliminated. With such a state of things existing, elimination necesarrily follows upon, and is proportionate to ingestion, and leads to the production of a result which is found to stand in harmony with observation.

I have spoken of ingested carbohydrate being checked by the liver from entering the general circulation as constituting what occurs under conditions of health, and I do not make this statement unsupported by the information afforded by experiment. I have conducted a large number of experiments upon the point, and can say from them that when the requisite precautions are observed, to obtain a representation of the natural condition of the blood of the systemic or general and of the portal circulation, a large preponderance of sugar is encountered in the blood of the portal vein, if the observation be made at a period of digestion and after the ingestion of food freely containing carbohydrate matter. But it is necessary to bear in mind, if the estimation of the sugar be effected, as is the common practice, with the copper test, that a fallacy may arise from the following circumstance, unless measures are taken to guard against it. With the transformation of starch in the alimentary canal, preparatory to absorption, it is not, certainly to any noteworthy extent, carried higher than maltose, which, as is known, has a cupric oxide reducing capacity of 61, as compared with glucose at 100, and much of it is only carried into a dextrin with a lower cupric oxide reducing power still. Hence the form of carbohydrate, derived from starch, which reaches the portal system does not possess the cupric oxide reducing capacity of glucose, but something more or less considerably below it. As an actual fact I have a recorded instance in which the product contained in the portal blood after the ingestion of starchy food possessed a cupric oxide reducing power standing as low as 21, as compared with glucose at 100. In this instance, if reliance had been placed

upon the ordinarily conducted method of estimation, the amount of carbohydrate present would have been expressed at only about one-fifth of what it really was. With a form of carbohydrate other than glucose existing, it is necessary to bring it into glucose by boiling with dilute sulphuric acid, to permit of the true amount being determined, and this has been the plan of procedure of late years adopted in the researches I have conducted.

I have considered it necessary to enter into these preliminary details. They display the nature of the faulty condition that has to be dealt with by treatment. Sugar reaches the general circulation in a manner that it ought not, and to its presence in the system are due the various symptoms belonging to diabetes. Through reaching the general circulation it becomes eliminated by the kidney and is lost. The disease thus involves a sacrifice of material which ought by rights to be turned to account, but this is a point that has but little bearing on the production of the phenomena that are observed in connection with the disease. If it were only a question of waste of the carbohydrate principles of food, there would be no reason against there being taken and allowed to run off. Provided a sufficient amount of other alimentary principles were consumed to meet the requirements of life, no particular harm need arise from the sacrifice of the material occurring. What, it may be said, in reality inflicts the harm is the altered constitution of the blood, occasioned by the presence in it of the sugar which passes through the system to the urine. In proportion to the largeness of the amount of sugar thus traversing the system in the blood, so will be the extent of deviation from the natural state, and so in correspondence the impairment of health that will be found to exist.

The class of case to which these remarks apply is that in which the discharge of sugar is susceptible of control by treatment, and the class embraces the majority of the cases in which the disease sets in after the middle period of life.

In such instances, starting with the ingestion of carbohydrate, there follows, briefly summarized, as a consequence of the want of proper transformative or assimilative power within the system, an accumulation of sugar in the blood attended with its discharge

by the urine. Accumulation of sugar in the blood leads to the production of symptoms proportionate in severity to the deviation from the natural state. The plain object before us is to reduce this deviation as far as is found to be possible.

We cannot be wrong in endeavouring to attain as close an approach to natural conditions as circumstances permit. If the chemistry could be set right, and sugar be prevented reaching the general circulation, the disease would be removed; but it may not be possible to restore the transformative or assimilative power which has become impaired or lost, and then the only way of arriving at what is wanted is to withhold from introduction into the system the alimentary principles which, owing to failure of power to properly dispose of them, cannot be of service, and which, by leading to the passage of sugar through the system, establish an unnatural condition and thereby inflict positive harm.

As long as the passage of sugar through the system is prevented no harm takes place. In the course of all my experience in diabetes I have never known anything serious to arise as a part of the disease so long as the urine has been kept free from sugar. There is nothing in fact to form the source of trouble, seeing that there is not the abnormal presence of sugar in the circulation to occasion deviation from the health state. On the other hand, when sugar is passing through the system, and the remark applies in proportion to the amount passing through, not only are there to be observed the symptoms ordinarily consequent thereon, but a constant state of insecurity exists, from the danger of the supervention of the serious issues known to follow upon the disease. Moreover, with the unnatural state occasioned by the presence of sugar, nutritive action is not carried on in such a manner as to properly maintain the general strength. As a consequence, the general power becomes sapped or prematurely exhausted, and the system weakened and rendered less able to resist the effect of pernicious influences. Such is not the position when sugar is not similarly traversing the system. Indeed there is nothing to render the state essentially different from that ordinarily existing.

The contrast between the two conditions—that is, where sugar

is allowed to abnormally exist in the system, and where it is prevented from doing so—is well shown in cases where the disease has run on for some time without being recognized, and is subsequently controlled by dietetic treatment. What will be observed in such instances will be a gradually advancing impairment of health and increasing severity of the symptoms of the disease, and it is right to assume that progress in the same direction would run on, and the patient grow worse and worse, if the condition continued to be left to itself. Whilst matters are thus proceeding it happens, say, that the existence of the disease becomes recognized, and, if the case be such that the sugar is susceptible of being removed from the urine by the exclusion of the carbohydrate principles from the food, and this exclusion be carried out, this alone will suffice, not only to check the downward progress occurring, but to bring back health and strength to the patient.

The first consideration, therefore, in the treatment is to control by dietetic measures the passage of sugar through the system. The real point, however, to be aimed at is to restore the assimilative power over the carbohydrate elements of food, and until this has been accomplished it cannot be said that a cure has been effected, but only that the disease is held in subjection and prevented, as long as the condition can be maintained, from leading on to an unfavourable issue. What most conduces to this desired restoration of assimilative power is the maintenance of a normal state of the system by keeping it free frem the passage of sugar through it, and in this way bringing a healthy condition of body to bear in helping to promote a removal of the faulty state.

According to my own experience, opium and its derivatives codeine and morphine are the medicinal agents which, more than any others that I know of, assist in the actual cure of the disease, by which I mean a restoration of the assimilative power which has been impaired-

The influence of these agents may be witnessed in cases where the sugar has been brought down by diet to a certain point, but is unsusceptible of entire removal from the system by dietetic treatment alone. The complete removal may then be

sometimes observed to follow the subsequent administration of the drug, showing that the medicinal agent has acted in the direction of exerting a restraining influence over the abnormal production and elimination of sugar.

When cases of a favourable nature—that is, cases occurring above the middle period of life—are treated by these combined measures, and the treatment is steadily carried on for some time, it is a matter of common observation that the system of the patient becomes able to tolerate a certain amount of carbohydrate food, without its leading to the elimination of sugar. Often, with strict observance of the required treatment, the assimilative power is found to become so far re-established that a fair amount of the carbohydrate principles, or even an ordinary diet, may be taken without leading to the elimination of sugar. When this is the case, carbohydrate principles, according to the extent found to be tolerated, may be taken without occasioning harm ; but the object is to keep below the point at which the escape of sugar takes place, and when this is done actual benefit, instead of injury, is derived therefrom.

Here I may refer to the aid afforded by the quantitative testing of the urine. It is absolutely essential, I consider, in the in the management of a case, to possess the knowledge thus supplied, not only for the purpose of regulating the treatment according to the progress made, but also for keeping a check upon the manner in which the directions given are carried out. When in a case it is found to happen that the assimilative power has been restored, it is permissible to consider that an actual cure has been effected ; but it is always requisite to bear in mind that a weak point has existed, and that it is advisable to avoid unduly taxing a power which has previously given evidence of being at fault.

GYNÆCOLOGICAL REPORT.

Commencing May, 1890.

By T. Johnson-Alloway, M.D.,
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The following cases, with their history and treatment, are taken from the case-book in the order in which they found their way there, with the exception of cases of abdominal section, which will appear in a separate fasciculus. They are diversified in character, and on this account may be of more interest to the general reader than if selected and grouped under special headings. The report will be continued from time to time.

Case I.—Age 37, married fifteen years, four children, widow eight years. Complains principally of extreme prostration; always tired; asthenopia; headache and constant backache. Menstruation every three weeks, with pain; duration not prolonged nor is the quantity excessive. Leucorrhœal discharge profuse.

Examination of pelvic organs.—Perineum in fairly normal condition; fundus uteri looking forwards in anteversion; uterus enlarged, tender, and in state of chronic metritis. Cervix bilaterally lacerated; most extensive ectropion and hypertrophy of mucosa. Cystic disease of everted cervical segments and cicatricial induration in angles of cervical laceration. No evidence of disease of ovaries or tubes.

Treatment.—One month's preparatory treatment in bed, then curetting of endometrium and Schrœder's trachelorrhaphy.

Three months after the operation the patient expressed herself as having recovered completely from the old feeling of exhaustion. Menstruation became normal and leucorrhœal discharge disappeared. Her eyes were still weak; it takes a long time for improvement to show itself in these organs under such circumstances. I have no doubt, however, regarding their improvement also in the course of time.

Case II.—Age 28, married four years, no children. Menstruation very profuse and painful; severe pain in back and sides and constant headache. The principal condition, however, of which she complained was intense pain during coitus, which of

late became absolutely unendurable. She was an emaciated, delicate woman, a condition so often seen in chronic pelvic disease; irritable in disposition, and always complaining.

Examination of pelvic organs.—On spreading aside the labia the first thing to attract attention was an hypertrophied and inflamed condition of the mucosa of the urethra protruding from the meatus urinarius. Surrounding the meatus the hypertrophied part was as large as the end of a finger, extending in the direction of the urethra and involving principally its inferior wall. This diseased part was very sensitive to the slightest touch, causing the patient to move away on the table from the examining finger. There was a purulent discharge issuing from meatus, but no pain during micturition. The uterus was anteflexed and somewhat fixed in its position, cervix congested, and glairy discharge issuing from os. Retro-uterine tissue very tender and whole pelvic floor much limited in its range of mobility. Probably pyo-salpinx.

Treatment.—This patient improved so much as regards the inflammatory condition of the uterus and surrounding parts under rest and preparatory treatment that she refused to have the appendages removed, and expressed herself as being quite well with the exception of the painful lips of the meatus urinarius. Under æther I removed a large V-shaped piece of chronic inflammatory tissue from the lower wall of the urethra, from the meatus upwards. I then pulled out as much as possible of the redundent mucosa with a tenaculum and excised it, and attached the remainder with fine catgut to the vaginal mucosa all around the orifice. The urethra from the neck of the bladder was finally swabbed out with pure carbolic acid.

From last information I received from this patient I learn that she still suffers from a return of the uterine and pelvic floor trouble generally, but the urethral condition has given her no more annoyance. Within the last three months I have met with another similar case of chronic urethritis accompanied with extreme suffering, where the same operation afforded relief. I prefer this method to Emmet's when there is much hypertrophy of the tissues around the meatus, always very sensitive and cannot be drawn into the canal by any amount of traction. It

is, in fact, a tumor or neoplasm with the opening not in the centre as in ordinary prolapse of the urethra, but at the periphery. In these irreducible cases Winckel performs a similar operation.

Case III.—Aged 19, unmarried. Menstruation regular, but somewhat painful. Uterus and adnexa found in a fairly normal condition. The principal symptom the patient complained of was a constant desire to urinate, passing only a few spoonfuls each time. In her present condition this desire would occur every ten to fifteen minutes, and with intense pain. For months past she cannot recollect having had a single night's rest, and this result of her trouble had made sad inroads upon her otherwise very robust health. She was pale, nervous and despondent, and would willingly submit to any course of treatment to obtain relief. She had had the urethra and neck of bladder dilated and many other methods of treatment adopted without relief. The urine showed pus and epithelial cells. The bladder was much contracted and excessively tender to touch of the sound.

Treatment.—The treatment adopted here was the forcible injection of hot water into the bladder by means of a Davidson syringe. I began with being only able to inject one ounce from, the intense suffering it caused. Each succeeding day I increased this, sometimes by a few drachms and again by half an ounce or an ounce. In the course of a week I reached five ounces. From this I got on more rapidly, and she would not suffer so much at each sitting. At the end of two weeks we reached twelve ounces, and at end of four weeks I could inject eighteen ounces, causing her to retain it for half an hour without any pain beyond a feel- of discomfort. She could now sleep all night without waking, which was quite a novel condition of things to her. During the daytime she could go without urinating for seven hours, only feeling pain on completion of the systole.

She now discontinued treatment, but returned again in three weeks to say that she was as bad as ever. I had not, however, much trouble with her this time, gradually getting as much as twenty ounces to be retained at each sitting. I also used latterly, after I had allowed the injected water to run off, a strong solution of nitrate of silver varying from 2 to 20 grains to the ounce, and allowed it to remain in the viscus.

I saw this patient some weeks afterwards, when she stated she was perfectly well and would return to me if she should have a relapse of the symptoms. I have not, however, seen her since.

This case was a very bad one, a type of chronic cystitis treated with most gratifying results by this method.

The method of forcible dilatation of the chronically diseased bladder by water has met with excellent results in the hands of the most experienced specialists of late years. And the strangeness of the idea is that it is directly opposed to the advice laid down to us by such authorities as Sir Henry Thompson and other English surgeons. Ultzmann uses 200 gm., but Winckel recommends much more. In the cases I have treated, the benefit seems to have been the result of opening up or unfolding the folds of the diseased mucosa. In this way the capacity of the reservoir has naturally been enlarged, but the muco-purulent decomposing discharge which lodges in the recesses was washed out and the surface constantly cleansed. The pain in connection with this treatment is sometimes very great, and often requires a hypodermic of Battley to enable the patient to bear it. The treatment also requires great care, patience and time on the part of the physician, otherwise an acute attack may be set up. As under all forms of treatment of chronic cystitis relapses are liable to occur, therefore the patient must be warned to return at once to the surgeon, when one or two sittings will set all right again.

Case IV.—Aged 30, unmarried. Menstruation regular, duration four days. Very severe dysmenorrhœa. Profuse leucorrhœal discharge, backache, seuere headache, and constant nausea. Inability to sleep.

Examination.—Purulent vaginitis due to wearing of a soft rubber ring pessary which had been introduced four months since. The uterus was retroflexed and very tender. She complained of hæmorrhoids of long standing.

Treatment.—The rubber ring was removed and the patient confined to bed. Douches of chloride of zinc solution soon relieved the vaginitis. The uterus was well anteverted and a proper retroversion hard-rubber pessary introduced to retain it in position. In the course of a few days afterwards the round

ligaments were shortened and the uterus held well up in the forward position. The ligaments were found fairly strong and of good size.

CASE V.—Aged 26, married three years; no pregnancy. This patient has every appearance of being in good health. She is fairly nourished and seems well supplied with blood. Before marriage she was considered strong, but of late she states that she has become morose and dyspeptic; suffers severe dysmenorrhœal pains, so much so that she is compelled to remain in bed and have hot applications applied. She menstruates every three weeks; duration three days; pain chiefly before appearance of flow.

Examination.—Vagina somewhat congested; uterus retroverted and tender to examining finger; cervix conoid in shape, with small pin-hole os. No evidence of disease of ovaries or tubes. Uterus easily replaced forward and retained so with a suitable retroversion hard-rubber pessary. Patient confined to bed on preparatory treatment for one month.

Treatment.—The cervix was pulled down and divulsed to the extent of 1¼ inches and the endometrium thoroughly curetted with the sharp instrument. The patient was then changed in position on the table and the round ligaments shortened. The ligaments were found of very full size and strong, and seemed to hold the uterus forward in good position. I used here only two sutures, the wounds being one and a quarter inches long.

The sutures (silkworm gut) were removed on the 13th day, and the patient returned to her home on the fourth week from date of operation with the uterus in good position. I have examined this lady quite recently and find the uterus in good position. She states that she has no menstrual pain, and that she enjoys very good health. In this and the previous case I endeavored to find the ligaments through a much smaller wound-opening than formerly, and I have ever since succeeded in finding the ligaments through an opening not more than an inch and a quarter in length, and consequently required only two sutures to close the wound and hold the ligaments. This improvement in the technique of this operation is of very great importance,

because it not only makes the operation less formidable and painful to the patient during convalescence, but it leaves the inguinal canal practically undisturbed. In fact the operation should never require a larger wound or more than two sutures.

Oct. 2nd.—I have just had a visit from this lady and find her three months pregnant. We have here much good resulting from the operation, as will be seen from her history. She had been three years married and *absolutely* sterile during that time.

Case VI.—Aged 32, unmarried. About one year prior to consulting me she states that while lifting a heavy book-case she experienced a sudden and severe pain in her right side ; and that since the time of this occurrence she has not menstruated. She also states that three months ago she was seized with constant vomiting whenever either solid or liquid food was taken, and that this condition still exists. There is at present severe pain in the back and right side, extending downwards into the iliac region. She suffers from constant headache, is extremely nervous, sleepless, and at times quite hysterical.

Examination.—This patient was wearing a soft rubber pessary at time of examination which had induced an attack of granular vaginitis. The uterus was found retroverted, the cervix looking directly forwards ; ovaries and tubes normal as well as could be judged. There was extreme sensitiveness over the whole sexual area, so much so that it was found impossible by her physician to make a satisfactory examination.

Treatment.—The pessary was removed and patient put to bed on preparatory treatment. On the 14th day the patient was anæsthetized and the uterus thrown well forwards, being held in this position by a pessary. The round ligaments were now taken up and shortened ; they were easily found, were of moderate size and strength, and were fixed in the wound by two silkworm gut sutures. After the æther nausea had passed away the patient had no more vomiting during her convalescence, neither had she headache. She took fair quantity of food, which digested well. The sutures were removed on the fifteenth day after the operation and all conditions seemed well. After she had been up a few days she suddenly received ill news from

England, which caused her to become depressed in spirits and finally hysterical. The vomiting and head symptoms returned at times. I examined the uterus on the occurrence of these symptoms, but was pleased to find it anteverted well and the pelvic floor free from tenderness. The patient remained in this doubtful condition for a couple of weeks, when she gradually began to improve again. The vomiting and headache disappeared, her good spirits returned, and she is now in excellent health, eight months since the operation.

I have learned since writing the above that this lady is at present filling an important position in a large educational establishment in Boston.

Case VII.—Aged 26, married four years; two miscarriages at six and eight weeks gestation respectively, the last miscarriage three years ago. She menstruates very irregularly, generally every sixth week, and experiences severe pain. The patient is much debilitated and emotional; has constant pain in the back, but not in the iliac region; nausea and headache constant; bladder function normal.

Examination.—Vagina spacious, vulvar outlet relaxed; uterus retroverted but freely moveable. There is no tenderness of the pelvic floor. Uterus can be easily drawn down to the introitus and anteverted without causing pain. Ovaries and tubes normal.

Treatment.—After a week's preparatory treatment and rest in bed I shortened the round ligaments. I found them of good size, but ran in their bed with difficulty. The left one came out 4 inches, the right 3 inches. This condition often happens. I have rarely observed the ligaments on both sides exactly alike either in length or calibre. The difference in length is due to adhesions drawing the fundus uteri somewhat over to one side of the pelvis through a shortening of that broad ligament. This condition may also interfere with the smooth running of the ligament and its size through interference with its nutrition. I have also observed a degeneration of the ligament; a fatty change takes place, causing it to break off quite easily in the fingers when being drawn out. When this mishap occurred, I have noticed that the uterine end did not recede into the canal

but remained at the place it gave way, so that it was easy to catch it up again with the forceps and continue traction until sufficient was withdrawn to suture into the wound. This patient when last seen was very well. The uterus was in good position and fairly high up in the pelvis.

Case VIII.—Aged 31, married ten years; two children, youngest six years of age. Menstruation regular, duration three to four days. This patient complained of severe pain in the hypogastrium and back, the pain running up to the occiput, sick headaches constant and easily aggravated, profuse leucorrhœal discharge,—in fact, this patient was a miserable wreck from nervous strain induced by a determination to endure suffering for which she thought she could obtain no relief.

Examination.—Perineum intact, but pelvic floor completely destroyed as regards its function. The outer integument of the perineum was not interfered with; it could be drawn up to a level with the clitoris, completely covering the vestibule. But when the forefingers of my hands were inserted into the vagina and separated forcibly it was simply appalling the cavity which could be produced. In fact it may be said there was no functional floor, merely a membranous bag into which the pelvic organs dropped. It is surprising how often this condition exists in nervous and emaciated women; they are under the impression that they have no pelvic floor defect because the outward appearance of the perineum is good, whereas in truth it is but a mere skin covering, behind which the anterior wall of the vagina and all above it drops as into a membranous bag. The uterus was low down, large and bulky from chronic metritis. It was lying in the position of retroversion of the third degree; all supporting ligaments relaxed in the extreme. The cervix uteri was bilaterally lacerated, bulbous and extensively cystic. The ovaries and tubes were apparently normal.

Treatment.—The objective points in the treatment of this case were (1) to reduce the size of the uterus, (2) to restore the function of the pelvic floor, and (3) to take all the weight off that floor possible. I therefore began by curetting very freely every vestige of the much hypertrophied endometrium, then

removed the diseased cervix by Schrœder's method. The second point I endeavored to accomplish by doing a very high flap-splitting operation upon the vagina, and by it improving the function of the levator ani. I then turned my attention to the third point by changing the position of the patient on the table and shortening the round ligaments. The ligament of the left side was very large and muscular, and ran easily; that on the right was also large and strong, but I did not get it to run quite so easily at first. Two sutures were used to close the wounds.

This case, when lately seen, was very much improved in health, and will still improve more. The uterus is well anteverted, the vagina small and strong. In a similar case, however, which came under my notice in addition to the above, I took out a large piece of the anterior vaginal wall (anterior colporrhaphy), and in this way added materially to the strength of the pelvic floor by preventing the slightest prolapse of the bladder on to the posterior wall of the vagina and perineum.

Case IX.—Age 24, married three years. Menstruation regular but very painful. Never been pregnant. Slight leucorrhœal discharge. Severe and constant bachache, headache and nausea. The lady was well nourished, and her general health did not seem to have been affected by her sufferings.

Examination.—Vagina and external parts normal. Uterus retroverted to second degree. Fundus exceedingly painful to the examining finger, but easily replaced to its normal forward position. The ovaries and tubes were apparently normal. A retroversion pessary was inserted, and the patient placed in bed. A week afterwards, I shortened the round ligaments. The structures were found of full size, and ran very easily. Two sutures used to close the wound. This patient did not suffer from the wound after the first day, and had a good convalescence. The sutures were removed on the fifteenth day after operation, and on her returning to her home four weeks after the operation, the uterus was firmly held in anteversion. I heard from her quite recently, saying that she was free from dysmenorrhœa and headache, and that she was in very good health.

Case X.—Age 40, unmarried. Has not menstruated for

the past year. She complains of a lowered condition of health and marked prostration. She has severe constant headaches. There is a profuse leucorrhœal discharge. She attributes all her ill-health to frequent and painful micturition. She has not slept at night for a long time. She had been under medical treatment in Edinburgh for the year past without benefit. She had, however, never allowed a physician to make a vaginal examination.

Examination.—Under ether, I found extensive prolapse of the urethral mucosa with hypertrophy of the lower segment, preventing it being returned. As she came out of the anæsthetic, the slightest touch upon the prolapsed urethra caused an instantaneous adduction of the thighs and movement of the body upwards on the table, showing the extreme sensitiveness of the part and the suffering it had induced. The urine was examined and found fairly normal.

Treatment.—Under ether, a few days after the examination made, I removed the prolapsed and hypertrophied part in the manner already described. I also dilated the urethra and neck of bladder with graduated dilators and curetted away quite a quantity of caruncles and hypertrophied mucosa from the urethral canal. Applied iodised phenol and put the patient to bed. In the course of a few days she had normal urination, and went home on the thirteenth day after operation. Some days before leaving she could urinate without pain, and slept soundly at night undisturbed.

Hospital Reports.

MONTREAL GENERAL HOSPITAL.

Condensed Reports of Cases in Dr. MacDonnell's Wards.

Appendicitis.—The difficulties in dealing with this disease are well illustrated by the histories of two patients who were in the wards during tne months of February and March. In the first case an early operation might have saved life; in the second case delay was evidently the right course to follow.

Case I.—*Symptoms of Peritonitis; Sudden Collapse; Death.*

Mary S., aged 20, admitted Feb. 21st, 1890. The day before admission, at 2 P.M., while she was sweeping, she was seized with violent pain in the abdomen. She had previously been in very good health, and had never experienced any abdominal pain of any kind, but two days before the attack she had driven some forty miles, and felt cold and chilly for a long time after her return. After she had gone to bed the pain became somewhat less severe, but did not leave her, and on the morning of admission it became extremely violent, extended over the whole of the lower part of the abdomen, and was not localized. Coincident with the occurrence of the pain there was severe vomiting, which returned at intervals of half an hour up to the time of admission. The bowels had moved somewhat loosely and frequently before admission.

State on admission.—Expression anxious; pupils dilated; cheeks flushed; right lateral decubitus with knees updrawn. There is no complaint of pain. Pulse 108, small and weak; temperature 103.2°F. Anorexia; tongue slightly coated; bowels somewhat loose. The surface of the abdomen is rather prominent, and there is tenderness universally, but there is no more pain on the right side than on the left. In the right iliac fossa the percussion note is inclined to be dull, and there seems to be in this region a well-defined sense of resistance to pressure. Menstruation began when she was 14, and has always been regular. Two days before the onset of the illness she began to be unwell, and the flow has continued uninterruptedly since.

Morphine was administered, pain relieved, and a fairly comfortable night passed.

On the third day of the illness the general condition was unchanged, but the pain and tenderness seemed to lie more in the epigastric region and right side of the abdomen. On the sixth day there was decided improvement; pain was no longer general, but distinctly localized in the right iliac fossa, and there was a painful spot half way between the spine of the ilium and the umbilicus. At this point a consultation was held as to the advisability of a laparotomy. Dr. James Bell and I decided that an abdominal section was not immediately called for. The patient's general condition had undergone such manifest improvement in the last twenty-four hours—the pain had become so much less severe, the temperature had gone down to 102° and showed a tendency to stay there, and the bowels had moved freely and comfortably without artificial aid. Led away by these considerations we postponed operative measures, and the sequel proved that we were wrong. If at any time laparotomy would have saved the patient it was just at this period, for on the evening of the same day a change occurred which put the saving of life by operation out of the question. On the day after this consultation (the eighth day) the temperature rose suddenly, the pulse became thready, and vomiting set in. The condition became rapidly one of collapse, and the patient died in about fifteen hours after the alarming symptoms set in. No autopsy.

If the diagnosis of appendicitis was an assumption that could not be borne out by the symptoms, it was evident that the general peritonitis depended on a local cause, and it is possible that had we not delayed, the local cause might have been removed.

The next case illustrates the other side of the question—the advantage of delay.

Elizabeth R——, aged 19, a tablemaid, was admitted on the 1st March, 1890, complaining of pain in the right side of the abdomen and general weakness. Twelve days before admission, while out walking in the street, she was suddenly attacked with dizziness, urgent vomiting, and very severe abdominal pain. She

has been in bed ever since this attack, suffering greatly from pain in the abdomen, vomiting, and fever. The bowels have moved but once since.

State on admission.—A fairly well nourished girl; hectic appearance; temperature 100.6°F.; pulse 104; respirations 20; tongue heavily coated; appetite bad; bowels constipated; abdomen moderately full. Just below the margin of the ribs in the right flank there is acute tenderness on pressure, but in the right iliac region she can stand manipulation without much suffering. No evidence of disease elsewhere.

The suddenness of the attack and its local character, the appearance of the patient, and the exclusion of all other causes, led me to suppose that the girl was the subject of an appendicitis, and alarmed by the rapidity with which fatal symptoms set in in the case already cited, the necessity for early laparotomy was constantly before me. One point, however, made the diagnosis doubtful—the presence of the pain at a point higher up in the belly than is commonly the case in appendicitis. For the first two days she seemed to improve, but on the third day the temperature began to rise. It soon fell and improvement gradually took place. On her discharge, the 27th day, all the symptoms had disappeared except some slight degree of pain on pressure in the right hypochondrium. We regarded the case as one tending to self-cure, and congratulated ourselves upon our good management.

In three weeks she was back in hospital again with abdominal pain and high temperature, but now the cause was apparent: a tumour occupying the lower umbilical region could plainly be felt, and during her second stay in hospital of four weeks this tumour became much more defined and increased in size and hardness. The diagnosis was now declared. The mass is undoubtedly of tubercular origin. Closer investigation of the family history showed that several of her very near relatives had suffered from consumption.

Unilateral Headache of great severity, followed by Facial Paralysis. Rapid Recovery under Iodide of Potassium.

B. D., aged 26, was admitted on Feb. 21st, 1890, with a

history of having suffered intense headache, which was said to have been the result of an attack of la grippe in December last. She was married at 17, had two children, both of whom she lost by diphtheria, and one miscarriage. Her second marriage took place eight months ago. She had been under treatment for the headache for some time, and had taken antipyrin, phenacetin, and morphia in very large quantities. The headache presented the following characters: it was intensely severe, constantly present with paroxysmal exacerbations, and generally interfered with sleep. Any effort, such as coughing or stooping, increased it. Its situation was mainly in the vertex and upper part of the forehead. but sometimes it was said to start from the right side of the head. There was hyperæsthesia of the scalp and tenderness on percussion over the right parietal region anterior to a vertical line drawn upwards from the external auditory opening. There was no evidence of syphilis whatever. The presence of a moderate degree of optic neuritis was made evident by the ophthalmoscope. On the 28th February she was examined before the clinical class and a diagnosis of intracranial growth, probably of a syphilitic nature, was made. The iodide of potash in increasing doses, beginning at ten grains, was prescribed. On the following morning the diagnosis was aided by the occurrence of facial paralysis of the left side, which was observed on waking. This was well marked. Further examination showed that there was also a slight weakness in the left leg. In three weeks afterwards all trace of the paralysis had disappeared, and she left the hospital entirely free from headache.

Reviews and Notices of Books.

A Text-Book of Practical Therapeutics. With Especial Reference to the Application of Remedial Measures to Disease and their Employment upon a Rational Basis. By Hobart Amory Hare, M.D., B.Sc., Clinical Professor of the Diseases of Children and Demonstrator of Therapeutics in the University of Pennsylvania, etc. Philadelphia: Lea Brothers & Co. 1890.

During the past few years a great number of text-books on materia medica have been published, only a few of which have any conspicuous merit. Many of them had better never been written. Dr. Hare's work belongs to the first mentioned class. It is a successful effort to bring together the disconnected facts of experimental pharmacology and clinical therapeutics. In this endeavour the learned author has branched out into a new track, and has produced a work which will save the student much and tedious work. In this volume the busy practitioner will find clear directions for carrying out a rational treatment of disease. The author ever keeps before him the necessity of knowing the "how" and the "why" in prescribing.

The Science and Art of Obstetrics. By Theophilus Parvin, M.D., LL.D. Second edition. Philadelphia: Lea Bros. & Co. 1890.

The second edition of Parvin's Obstetrics shews signs of very careful revision, and has been brought well up to date. Many sections have been rewritten, new illustrations added, and much valuable matter appended from foreign publications, notably from Winckel's new book. Dr. Parvin is a charming writer, and though inclined to be conservative (a good failing now-a-days), he is thoroughly sound in doctrine and abreast of the times. He is a powerful advocate of antiseptic treatment, and exposes with unsparing hand the fallacies and dangers of the *auto-infection* doctrine. Dr. Parvin's work is both instructive and suggestive, and is one of the best text-books for the general practitioner.

Society Proceedings.

MEDICO-CHIRURGICAL SOCIETY OF MONTREAL.

Stated Meeting, 30th May, 1890.

G. E. Armstrong, M.D., President, in the Chair.

Myocarditis.—Dr. Hutchinson exhibited this specimen, which showed a large caseating mass in the wall of the left ventricle. The patient, a young man, had died quite suddenly whilst engaged in playing a game of cricket.

Biliary Calculus.—Dr. Jas. Bell exhibited this specimen, which was of unusual size, equal that of an English walnut. The patient who passed this calculus had for some days suffered from severe abdominal pain and stercoraceous vomiting. Operation of abdominal section was proposed, but refused by the patient. Enemata were used, resulting in the passage of a large gall-stone, followed by immediate relief of the symptoms.

Dr. Geo. Ross remarked that he had seen this patient with Dr. Bell, and was in doubt about substantiating a diagnosis of invagination. This case was one which had occurred rapidly, and without much inflammatory action. No meteorism of the belly. Wandering pains about abdomen; marked wasting. These symptoms, when considered with her age and the existence of defined obstruction, pointed, in his mind, to a growth malignant in its nature. Such a condition, however, warranted a surgical interference. From the history there was positively nothing to be gleaned which could substantiate a diagnosis of biliary calculus.

Vesical Calculi.—Dr. Jas. Bell exhibited a specimen removed by the lateral operation from a patient the subject of diabetes mellitus. This same patient had had a vesical calculus removed one year previously by Dr. Roddick.

Dr. Hingston exhibited a vesical calculus which he had removed by lateral perineal section in a patient 36 years of age. The calculus weighed a little over five ounces. Dr. H. stated that although satisfied with the operation and its results, in view of the great difficulty and delay in removing a calculus of so large a size, he thought the supra-pubic method, as recommended by Sir Henry Thompson, would offer less difficulty, and might otherwise be preferable. The calculus

exhibited was second in size to one, weighing five ounces and five drachms, removed by himself in July 1873, and of which an engraving was to be found in the sixth volume of the *International Encyclopædia of Surgery.*

Dr. McCarthy then read his paper upon "*The Distribution of Lesions in Chronic Phthisis,*" which appeared in the August number of this Journal.

Discussion.—Dr. Geo. Ross corroborated Dr. McCarthy's views in laying stress upon the examination of the apices, especially posteriorly, many lesions being only detectable in these regions. He had himself often traced the course of tubercle in its march from apex of lung to the base, and found the physical signs running along the septal border. Unless we have disturbance of the tidal air do we exceptionally find basic phthisis.

Dr. Kinloch—Not knowing anything of Dr. McCarthy's theory, I saw a case recently which verified his views. There was a hectic flush and cough; no expectoration and no hæmoptysis. Examination of the front of the chest was negative in its results; looked for basic infection without any being found, but in the right apex behind I discovered a focus which had extended along the right axilla.

Dr. F. W. Campbell remarked that he had always insisted upon a thorough examination of the bases of the lungs, his experience teaching him that basic phthisis is not so rare as it is thought to be. He had frequently met with the lesion in this locality, especially in cases of phthisis which had developed after confinement.

Stated Meeting, 13th June, 1890.

G. E. Armstrong, M.D., President, in the Chair.

Appendicitis.—Dr. Geo. Armstrong related a case of a young woman, aged 21, who had always suffered considerable pain at the menstrual period, and during one of the periods the pain was more severe than on former occasions. Two days after onset of menses they ceased; the temperature rose within forty-eight hours from 99° to 103°. tympanites now making its appearance for the first time, and the pains located in the right

iliac fossa. Abdominal section was performed, and it was found that a perforation of the appendix had taken place. The appendix itself contained three fæcal concretions (one also being found in the abdominal cavity), and it lay coiled up behind the cæcum. The large bowel was found to be gangrenous and the peritoneal covering coming off.

Dr. Shepherd remarked that too great stress was not to be laid upon the temperature or pulse, as he had met with cases of appendicitis in which both were normal; one case the pain was located in the *left* side, and abdominal section revealed the existence of disease of the appendix.

Elephantiasis of Breast.—Dr. Johnston exhibited two specimens of elephantiasis of the breast, one of which was presented by Dr. Gooding of Barbadoes. These tumors are of a non-malignant nature and generally involve the whole breast; sometimes their growth is attended with pain. In the centre of one of the specimens was a large cyst, filled with degenerated fluid; these cysts are a secondary result of obstruction of the milk ducts.

Fibroma of Breast—Dr. Johnston exhibited this for Dr. Shepherd. The growth had been of thirteen years standing, and was found to contain several cysts; when cut they seemed to open like the leaves of a book.

Dermoid Cyst of Breast.—Dr. Shepherd remarked that he had removed such a tumor from a woman whose right breast had become "caked" after the birth of her second child. The tumor itself was movable and encysted, the contents being of a putty nature, and had the clinical appearances of a dermoid cyst. The occurrence of tumors of the breast of this nature is rare.

Retropharyngeal Abscess.—Dr Johnston reported that the examination of the vagi nerves from this case (which was reported in a previous number of this Journal) showed the presence of inflammatory tissue about the sheath of the nerves of a subacute nature. No tubercle bacilli were found in the sheaths.

Drs. Wm. Gardner and J. C. Cameron then read conjointly a paper on a case of "*Labor Complicated by a Fibro-Myoma of the Uterus*," (*vide* August number of this Journal).

Stated Meeting, June 27th, 1890.

G. E. ARMSTRONG, M.D., PRESIDENT, IN THE CHAIR.

Nasal Osseous Cyst.—DR. MAJOR showed this specimen which he had removed from a patient suffering from polypi of the nose. It was situated on the middle meatus of the left side, and was readily removed by a wire snare.

DR. R. L. MACDONNELL then read his paper upon "*One Hundred Cases of Typhoid.*"

Discussion.—DR. SHEPHERD corroborated the statement of the reader of the paper as to the infectious nature of typhoid. Profuse rash in this disease he regarded as a favorable symptom.

DR. BELL remarked that his conclusions were given weight through a careful analysis of the many cases under his own observation whilst a resident of the General, and that he could not support the theory of personal contagiousness. The reason why those who sometimes contract typhoid after a long residence in hospital was due probably to the fact that many of the employees are often reduced in vital power from over-work, and thus placed in a condition suitable to the development of such a disease. Constipation he thought to be a favorable symptom. Acute phthisis he had seen developed in several cases of typhoid. As to the therapeutic measures, he had no faith in drugs as a means of aborting the disease. Antipyretics he thought acted by reducing the vitality, and therefore did not believe in their use.

DR. HUTCHINSON would verify the fact of frequent abortions in the course of typhoid. As to the use of antipyrin in reducing the temperature he had given up its use, as the administration of the drug in four grain doses had in three cases been followed by collapse.

DR. KIRKPATRICK related a case where the same bed had been used for another patient, the one having just recovered from typhoid and the second patient shortly afterwards developed it.

DR. JOHNSTON said that out of sixteen recent post-mortems of cases of typhoid fever he had only met with three in which perforation had occurred, therefore he could not be certain as to the

frequency of such a lesion. The percentages of such a lesion varies with different authorities.

Dr. Mills thought that the physiological functions of the alimentary canal are not sufficiently understood, and our ill-successes in treatment are undoudtedly due to this fact. He did not think that constipation was a favorable symptom, as it was frequently followed by an almost uncontrollable diarrhœa.

Dr. Armstrong disagreed with the reader in the contagiousness of typhoid from his experience of private cases which were isolated and attended with no further spread of the disease. He advocates antithermic treatment by the use of baths, which has a further effect of acting as a stimulant. Failure of the heart's action he did not think due to parenchymatous change in that organ, but to nervous influence.

Dr. MacDonnell, in reply, said that he had had only one death from perforation, which was verified by post-mortem, not three, as stated by Dr. Johnston. He agreed with Dr. Bell in the statement that most cases of typhoid developed amongst the students have not arisen from their attendance upon such cases at the hospital, but upon the unsanitary condition of the houses they live in, as most of those cases have developed amongst students of the first and second year, who do not attend the hospital. Constipation in the course of typhoid he had not seen give rise to any untoward symptoms.

Biliary Calculi.—Dr. Shepherd exhibited the specimens which he had removed by cholecystotomy. (For full report of case and operation *vide Annals of Surgery*, November 1890, and *N.Y. Medical Journal*, Oct. 11, 1890.)

Notice of Motion.—Dr. Bell gave notice that three months from date he would move that By-law IX, on page 6 of the By-laws and Constitution of the Montreal Medico-Chirurgical Society, be rescinded and omitted.

CANADIAN MEDICAL ASSOCIATION.

Twenty third Annual Meeting, held at Toronto, Sept. 9th, 10th and 11th, 1890.

General Session.

Dr. James Ross, Toronto, President elect, presided owing to the unavoidable absence of Dr. H. P. Wright.

The Secretary (Dr. Bell, Montreal) read the minutes of the last meeting of the Association, which were confirmed.

A report was read from the committee appointed at the last meeting to interview the Government in regard to the importation of surgical instruments and appliances at a reduced tariff.

Reports were also given by Drs. Muir of Nova Scotia and J. J. Farley of Ontario (local secretaries) upon the question of affiliation of the local societies with this Association.

Upon motion by Dr. James Stewart (Montreal), the following gentlemen were appointed as a nominating committee :—Drs. Praeger (Nanaimo), Chown (Winnipeg), Rodger and Lachapelle (Montreal), A. H. Wright and Sheard (Toronto), Campbell (Seaforth), and Holmes (Chatham).

Dr. Rodger (Montreal) was appointed chairman of the Surgical section, and Dr. Oldwright (Toronto) chairman of the Medical section.

Dr. James Ross, in the absence of the chairman of arrangements (Dr. Canniff), made announcements concerning the entertainments to be given during this meeting.

Drs. A. W. Quene and F. Wheeler-Waine of Detroit presented credentials as delegates of the Michigan State Medical Society and were introduced by the President.

Sir James Grant (Ottawa) was invited by the President to take a seat upon the platform.

The meeting then adjourned until 2 P.M.

Afternoon Session.

Dr. James Ross presiding.

The meeting being called to order, Dr. J. Stewart (Montreal) moved that the names of Dr. Prevost (Ottawa) and Dr. Sloan

(Blyth) be substituted for those of Drs. Campbell (Seaforth) and Holmes (Chatham), these latter gentlemen not having arrived.

The following gentlemen having been duly proposed and seconded, were unanimously elected members of the Association: Dr. E. H. Coburn (Fredericton, N.B.) and E. H. Rouleau (Calgary).

Hon. J. A. Ross, Minister of Education in Ontario, was introduced by the President, and made a short address of welcome.

The President then read his address, after which Dr. Prevost (Ottawa) was called upon to deliver the address in medicine. Sir James Grant (Ottawa) made a few remarks at the close of this address.

Dr. Oldwright (Toronto) having declined the chairmanship of the medical section, Dr. McPhedron (Toronto) was nominated by the President, and accepted the nomination.

The meeting then adjourned to sections.

Surgical Section.

Dr. T. A. Rodger (Montreal) in the chair.

A paper was read by Sir James Grant (Ottawa) on *Peri-Urethral Inflammation.* Discussed by Dr. Shepherd (Montreal).

Dr. J. F. Ross (Toronto) read a paper entitled *The Failure of the Removal of the Ovaries and Tubes to remove Symptoms.* Discussed by Drs. Walker (Toronto) and Shepherd (Montreal).

Dr. Shepherd then read a paper on *Cholecystotomy.* Discussed by Dr. Chown (Winnipeg), Dr. Oldwright (Toronto), Dr. Praeger (Nanaimo), Dr. Ross (Toronto), and Dr. Bell (Montreal).

Medical Section.

Dr. McPhedran (Toronto) in the chair. Dr. Finley (Montreal) was appointed recording secretary.

Dr. R. L. MacDonnell of Montreal read a paper on *The Cardiac Complications of Gonorrhœal Rheumatism.* After drawing attention to the generally existing doubt as to the presence of cardiac complication in this form of rheumatism, a review of the literature of the subject was given, calling attention to the

published cases of heart affection in gonorrhœal rheumatism. An analysis of twenty-seven cases of gonorrhœal rheumatism was made from the records of the Montreal General Hospital, in which there were six cardiac cases. Three of these cases then were excluded, leaving three probably due to gonorrhœal rheumatism. A history of a case observed from the onset by the author was next described. A young man was attacked by oppression and slight joint pains. Some days later he was seen suffering from orthopnœa, the symptoms resembling a case of acute pneumonia· On the following day a double friction pericardial murmur was detected, and it was only then that the presence of a gonorrhœa of five weeks standing was discovered. A mitral systolic murmur developed, and later on double pleurisy, which proved to be permanent. Recovery occurred after an illness of six weeks. Dr. MacDonnell concluded that although a considerable number of cases were recorded of this complication many would not bear inspection ; that pericardium, endocardium and pleura are in rare cases involved in gonorrhœal rheumatism.

Dr. Graham of Toronto referred to the possibility of Dr. MacDonnell's case being one of ordinary rheumatism, owing to the transient nature of the joint pains. He doubted whether cardiac complication ever arose in pure gonorrheœal rheumatism.

Dr. MacDonnell, in reply, referred to cases in which cardiac complications had arisen in gonorrhœa without joint affection.

Dr. Nesbitt of Toronto read a paper on the *Pharmacology of Salicylamide.* The chemical and physical properties were first described and the author's method of preparation. Dr. Nesbitt finds that diastatic and peptic actions are diminished, and its action is detrimental to the development of bacteria. Experiments had been carried out by Dr. N. on the action of the drug on the nervous system, heart, and the effects on man as noticed in experiments on the author of the paper. The drug is an analgesic, and cases were quoted in support.

Dr. Finley read a paper on *Spinal Syphilis.* After referring to the various affections induced in the spinal cord by syphilis, three cases were reported. In one a gumma pressing on the

cord and causing ataxia, the symptoms were rapidly relieved by mercury, whilst the others being due to myelitis, had been but slightly influenced by treatment.

Dr. McPhedran referred to a case in which syphilitic disease of the cord simulated exactly locomotor ataxia.

Dr. Graham referred to a case of cerebral syphilis in which emaciation and dizziness were the only symptoms for a year, when hemiatrophy of the tongue developed, and specific remedies were applied successfully.

Dr. Stewart pointed out that the degenerative changes must be distinguished from gross lesions, the latter only being amenable to treatment by antisyphilitic remedies.

Second Day.

After the reading and confirmation of the minutes the following gentlemen were elected members:—Drs. Geo. Acheson, Toronto; J. R. England, Montreal; A. Primrose, Toronto; — Lane, Mallorytown; F. G. Finley, Montreal; C. A. Jones, — Barrick, L. Sweetman, Toronto; Wm. Porteous, Montreal.

Dr. E. A. Praeger (Nanaimo), chairman of the Nominating Committee, read the following report, recommending Montreal as the place of meeting for next year:—

For President—Dr. T. G. Roddick, Montreal.
General Secretary—Dr. H. S. Birkett, Montreal.
Treasurer—Dr. W. H. B. Aikins, Toronto, re-elected.

Vice-Presidents:

Ontario—Dr. A. H. Wright, Toronto.
Quebec—Dr. E. P. Lachapelle, Montreal.
New Brunswick—Dr. G. H. Coburn, Fredericton.
Nova Scotia—Dr. John Stewart, Pictou.
Manitoba—Dr. D. Young, Selkirk.
British Columbia—Dr. E. A. Praeger, Nanaimo.
Prince Edward Island—Dr. Taylor, Charlottetown.
North-West Territories—Dr. G. A. Kennedy, McLeod.

Local Secretaries:

Ontario—Dr. Prevost, Ottawa.
Quebec—Dr. P. Robertson, St. Andrews.

New Brunswick—Dr. Bruce, St. John.
Nova Scotia—Dr. A. Morrow, Halifax.
Manitoba—Dr. T. M. Milroy, Portage-la-Prairie.
British Columbia—Dr. Jager, New Westminster.
Prince Edward Island—Dr. D. Mackay, Summerside.
North-West Territories—Dr. Oliver, Medicine Hat.

Committees:

Necrology—Dr. S. Davison (Toronto), Dr. James Stewart (Montreal), and Dr. Daniel (St. John).

Publications—Drs. Sheard and A. H. Wright (Toronto), Geo. Ross, F. W. Campbell, W. E. Desrosiers and L. Fortin (Montreal), A. Morrow (Halifax), and Pennifather (Winnipeg)

Ethics—The President, General Secretary, and the eight Vice-Presidents.

Arrangements—Drs. J. Bell, Rodger, L. E. Lachapelle, Desjardin, Lamarche and Shepherd, of Montreal, with power to add to their number.

Climatology—Drs. Oldwright (Toronto), McGuinness (Edmonton), and D. A. Campbell (Halifax).

Auditors—Drs. Rodger (Montreal) and A. A. MacDonald (Toronto).

Moved by Dr. Muir, seconded by Dr. Atherton, that the report be amended by the addition of a committee on Education and Literature, consisting of Dr. I. W. Cameron (Toronto), Chown (Winnipeg), and Shepherd (Montreal).—*Carried.*

Moved by Dr. Praeger (Nanaimo), seconded by Dr. Sheard (Toronto), that this report be adopted.—*Carried.*

Dr. Patton (Buffalo), an invited guest, was introduced by the President.

The subject of affiliation of the Canadian Medical Association with the provincial and local societies was brought up by a letter from Dr. Wishart, Secretary of the Ontario Medical Association, to Dr. Farley, local secretary of this Association for Ontario, stating that the question had been discussed at the last meeting of the Ontario Council, and a committee was appointed, consisting of the President, Secretary and Dr. Temple, to investigate the matter and to meet during the meeting of the Canadian Medical Association.

Drs. H. P. Wright, Farley and Muir, of this Association, were appointed to confer with the above-named committee

from the Ontario Association and to bring the matter before this Association at the general meeting to-morrow.

Dr. Chown (Winnipeg) then read his address on Surgery, taking for his subject *Hydatid Disease.*

Dr. J. C. Cameron (Montreal) next read his address on *Midwifery,* dealing with the elevation of temperature in puerperal conditions. (*See page* 241.) Discussed by Drs. Sloan (Blyth), Lapthorn Smith (Montreal), Sweetnam (Toronto), Mullin (Hamilton), Gardner (London), Armstrong (Montreal), Praeger (Nanaimo), and Dickson (Toronto).

On motion of Dr. Burt, it was decided to have an evening session.

Evening Session.

Dr. Muir (Truro) read an address on *Therapeutics and Materia Medica.* Discussed by Drs. English, Bell and McPhedran.

Dr. J. Campbell's (Seaforth) paper was declared read by title in the absence of the writer.

Dr. H. R. Elliott (Brucefield) presented a patient with molluscum fibrosum and read a report on the case.

Dr. McPhedran read a paper on "*Pernicious Anæmia.*" He detailed five cases. In the first there was delirium, chills with high temperature, and gastro-intestinal disturbance. The red blood corpuscles were typical—731,000 per cmm. Arsenious acid, gr. 8¼ per diem, was taken for two months. Recovery complete in seven or eight months. Continues well. In Case 2 the symptoms were moderate; 606,000 corpuscles per cmm. Arsenic had to be intermitted every few days on account of epigastric pain, and was stopped altogether in four months, when the corpuscles had reached 2,600,000. Recovery complete in ten months. Case 3 followed parturition; was not severe; has a probable causative relation to unsanitary dwellings. Recovery complete in six months. Case 4 followed *la grippe*; simulated malignant disease of stomach. Does not stand arsenic well, even in minute doses. Not improving yet. Case 5 appears to have been affected two years ago, recovering partially without special treatment. Is progressing favorably on arsenic. In all these cases there was gastro-intestinal disturbance, high-colored, acid urine, not increased in volume, of low specific gravity,—these

characters being most marked during exacerbations, during which (in Case 4) there were found many renal casts containing much dark granular pigment, also much yellowish pigment, masses disappearing as the exacerbation passed off. No microscopic examination was made in the first three cases, and no pigment has been found in the urine of Case 5, who has had, however, no paroxysm since under observation. He said the work of Hunter, Mott and others shewed that the disease is characterized by excessive hæmolysis occurring in the portal system, due, probably, to some poison, possibly a ptomaine or some of the many albumoses that may be absorbed from the intestinal tract. The treatment advised consisted essentially in intestinal disinfection, thymol, beta-naphthol and naphthaline being the most effective agents for that purpose; the free administration of arsenic, in minute doses at short intervals if not well borne; and the hæmatogen-bearing foods.

Discussed by Drs. Rodger, J. Stewart, and J. E. Graham.

Moved by Dr. A. H. Wright, seconded by Dr. C. O'Reilly, that the thanks of the Association be tendered to the owners of the yachts for placing these boats at the disposal of the Association for a cruise on the afternoon of September 10th.

The meeting then adjourned.

Third Day.

Dr. James Ross presiding.

Hon. Dr. Sullivan (Kingston) and Dr. Morehouse (London), President of the Ontario Medical Association, were invited to seats upon the platform, and delivered short addresses.

The by-laws were then brought up for adoption.

Moved by Dr. Henderson (Kingston), seconded by Dr. W. S. Muir (Truro), that the by-laws as read be adopted.

The following notice of motion was given by Dr. Mullin:—"That no proposal for honorary membership shall be presented to the Association unless it shall have been previously submitted to a committee consisting of the President, Secretary and Vice-Presidents, who shall report to the meeting before the name is submitted for election."

Dr. Trenholme's notice of motion being read and discussed, was laid over for the next meeting.

The following gentlemen were proposed and elected as permanent members: Dr. W. P. Caven (Toronto), Dr. J. E. Eakin (Belleville), and Dr. English (London).

Dr. L. Smith (Montreal) read a paper entitled *Why Apostoli's Method sometimes Fails.*

Dr. W. Walker (Toronto) read a paper on *Electricity in Gynæcology.* Discussed by Dr. Smith (Montreal), Walker, Dickson (Toronto), Sloan and Henderson.

Dr. B. E. McKenzie exhibited a case of spinal curvature (lateral), explaining methods of treatment.

Dr. H. S. Birkett (Montreal) read a paper on *Hemiatrophy of the Tongue*, upon which a few remarks were made by Dr. Shepherd.

Dr. Smith (Montreal) read a papar on the *Local Administration of Bichloride of Mercury as an Alterative in Pelvic Exudations in Women.*

Dr. A. Proudfoot (Montreal) read a paper on a *Severe Case of Epilepsy Cured by Enucleation of an Eye containing Ossific Deposits.*

Moved by Dr. J. Stewart, seconded by Dr. England, that the remaining papers be considered as read.—*Carried,*

The Treasurer's report was received and adopted.

The joint committee appointed to investigate the question of affiliation reported as follows, through Dr. H. P. Wright, chairman:

" Your committee beg to report as follows,—

" Whereas it was resolved at the Banff meeting of this Association that negotiations be entered into between the Dominion Association and the various Provincial associations with a view to draw the members of the profession in the Provinces more closely together; and whereas the Provincial associations of Nova Scotia and Ontario have cordially entered into the idea and are willing to affiliate if a general basis be adopted;

" That it be hereby resolved that each Provincial association be requested to send to each meeting of the Dominion Medical

Association at least *four* delegates, and in those provinces where no Provincial association exists, that one delegate be received from each local association, and that the secretary of this Association be instructed to communicate to this effect with the various provincial and local medical associations."

Moved by Dr. Gardner, seconded by Dr. Sullivan, that the report be received and adopted.

After motion of thanks to the President, Educational Department, and retiring Secretary, the meeting adjourned.

Selections.

LETTERS TO MY HOUSE PHYSICIANS.

By William Osler, M.D.,
Professor of Medicine, Johns Hopkins University, Baltimore.

Letter II.

Berne, May 21, 1890.

Dear T.: Within an hour after reaching Basel we were in the *Vesalianum*, as the anatomical institute is called, looking for the skeleton which Vesalius presented to the university when he was here in 1542-'43 supervising the printing of his great work. Historically this is probably the most interesting museum specimen in existence, and to Professor Roth is due the credit of determining accurately the fact of its association with Vesalius. Several years ago he sent me his paper on the subject, an abstract of which you will find in the *Medical News* for 1887 (or 1888) in an editorial note. The plates of his work were drawn from this skeleton, which is treasured by the Basel faculty as a most precious relic. Above the glass case in which it is contained is this inscription: "*Männliches Skelet das der Meister der Anatomie Andreas Vesal, aus Brüssel, der hiesigen Universitat schenkte als er* 1543 *sich in Basel aufhielt um der Druck seines grossen Anatomischen Werhes zu besorgen.*" Well may he be called the Master of Anatomy, the great Reformer in Medicine, for his work loosened the chains of tradition in which the profession had been fast bound for centuries. His was a bold and venturesome spirit which could dare dispute the statements of Galen and Hippo-

crates, dogmas revered by the physicians of the sixteenth century as are to-day those of Calvin and of Luther by certain theologians. Prof. Roth has recently published an interesting paper (*Quellen einer Vesalbiographie*, Basel, 1889), in which he has given the results of his researches among the archives of the University of Padua, and he has determined definitely for the first time the date and place of the graduation of Vesalius—Padua, Dec'r 5, 1537. Please note, too, that he was a young man when he published his great work, another illustration of the theory upon which I am always harping, that a man's productive years are in the third and fourth decades. It is not a little remarkable that the skeleton should be in such a state of preservation; but above it lies another, prepared by Felix Plater, a renowned Basel professor of the 16th century, also in excellent condition.

The Basel Hospital is an old building but very conveniently arranged and with beautiful gardens, in the middle of which is a large summer ward for women and children. I am much indebted to Director Hoch for his kindness in showing me the different departments. In the operating room the table is constructed of zinc with a hot-water chamber, above which is a perforated plate so that irrigation can be carried out. The warming-pan—of which it is practically only a special example—is also perforated in the middle for the escape of the solutions. I am sure that for prolonged operations this is a great advantage in counteracting the depression so liable to occur both from the shock and from the anæsthetic. Not ten days ago I saw the same arrangement in use at the Physiological Laboratory of University College, London, in a prolonged experiment upon the brain of a monkey. Professor Schäfer told me they had found that the animals stood the operations very much better and revived more promptly if the body temperature was kept up in the artificial way. So important did he seem to think it that additional hot water was put in at the end of about an hour and a half.

We found Professor Socin in the operating-room with a class of about thirty men, a patient on the table, and a senior student in the arena, who, during the course of an hour, underwent a

most searching examination on tuberculosis of joints and on the particular case before them. It was certainly a most instructive method of procedure, and it was fortunate the poor patient was deaf, as the questions of prognosis and of treatment were discussed thoroughly. Amputation of the leg was then performed, as the disease had progressed too far for resection. We could not but feel, however, that it was hard to keep the poor man waiting on the table. Certainly the ward would have been the more appropriate place for the instruction. The Basel students have an exceptionally clear and decisive teacher of surgery; here again the colored chalks on the blackboard were used at least half a dozen times to illustrate special features of the disease and steps of the operation.

Professor Immermann has charge of the medical clinic, and has a conveniently arranged, though not large, clinical laboratory. The lecture-room is attached to the medical wards, and we heard for half an hour a very practical talk on the treatment of acute Bright's disease. A point specially insisted upon in the later stages was the flushing of the tubes by a plentiful supply of liquids. Then the class was taken into one of the men's medical wards, and a student examined a case of typhlitis, upon which the comments of Professor Immermann were very interesting. The young man had been seized five days before with pain in the right iliac region, not of an agonizing character, and moderate fever, so that he had to give up work. He had not been particularly constipated prior to the onset of the pain, but he had had, several years ago, a somewhat similar attack. The examination showed simply pain on deep pressure in the right iliac fossa, no tumor, no signs of peritonitis. The case was regarded as one of appendicitis, and, as the symptoms had progressively improved, the treatment was confined to the administration of opium and the use of local applications. Great stress was laid on the absence of tumor as a differential point in the diagnosis of appendicitis and typhlitis from fæcal impaction. I gathered that Professor Immermann believed in the existence of a typhlitis apart from appendix disease; and the tumor, which is more apt to be present in these cases, may be due either to primary im-

paction or to fæcal stasis in the cæcum in consequence of the inflammation. Now, this was a case which illustrated the point I mentioned in my letter to L. I have not the slightest doubt that, if a laparotomy had been performed, an inflamed and adherent, possibly a perforated, appendix, would have been found, yet the lad was recovering under ordinary measures. Still, the risks are very great, balancing those of an operation even at this early stage, as perforation into the general peritoneum is always imminent, and then there is the liability to recurrence, as shown, indeed, in this case.

In the Vesalianum one of the Privat Docenten, von Lenhossék, showed us the method of preserving subjects, which is that of Laskowski of Geneva. An injection of glycerin with carbolic acid, with a little alcohol, is first made, and then the ordinary Teichmann's mass, consisting of putty and bisulphide of carbon, with a suitable coloring ingredient. A preliminary washing out of the blood-vessels is advisable. In Geneva the subjects are wrapped in sheets, which are sprinkled with water, and Ramsay Wright tells me that the bodies were in an excellent state of preservation. Von Lenhossék said that they found it necessary to use alcohol in the tanks. The muscles are certainly very well kept by this method, and the dissection is said to be easier than in bodies preserved with the bichloride of mercury.

In the pathological laboratory Prof. Roth showed us a recent specimen of enormous epithelioma which had developed in an old leg ulcer, the result of a fracture many years before. The tumor had involved the bone and the leg had to be amputated. Under his direction, Dr. Dubler, the assistant, has been making an interesting research on suppuration, which has just been published. He comes to the conclusion, from a very large series of experiments, that the pus formation which follows the injection of chemical substances is the result of a delimiting inflammation about a primary necrotic area, and in the same way bacteria act by causing a necrosis, which the suppuration removes, so that there is no essential difference between the process in the two cases.

Here in Berne we found a model hospital on the pavilion plan,

situated on a sloping hill on the outskirts of the town, and from the wards there is a magnificent view of the Bernese Oberland. The appearance of the pavilions, rising one above the other in the grounds, is very effective, and the new Royal Victoria Hospital in Montreal, which is also to be on the side of a hill, will, I think, resemble this very much. The Pathological Institute is a large, separate building, with every possible convenience for teaching and research. Professor Langhans, was kind enough to show us all his treasures, not the least interesting of which was the skeleton of a bicapitate monster, presented to the university over a hundred years ago by the great Haller, who was a Swiss, and who lived near Berne, I believe, after his retirement from Göttingen. In the post-mortem theatre I was glad to see that to the students' desks towels were attached, a convenience rarely met with.

The medical clinic is in charge of Professor Sahli, a comparatively young man, appointed last year. There are two stories in the chief medical pavilion, with four wards, and there is accommodation for about eighty patients. Connected with it by a covered passage is the lecture-room, with seats for about 100 students. A very complete electrical equipment and tables for urinary and microscopical examination are on either side of the arena. There were 84 students at the clinic, 18 of whom were women. After a careful analysis with a student of the chief points in the history and treatment of whooping-cough, a case of diabetes was brought in from the wards, and the next *Prakticant* on the list happened to be a woman, who went through the ordeal of questions in the various modes of testing for sugar in the urine. The saccharometer of Hermann and Pfister was shown, and then, after the clinic, those students who so desred had an opportunity of seeing the practical working of the apparatus. On either side of the amphitheatre is the clinical laboratory, with bacteriological, chemical, and microscopical rooms, large, admirably equipped and very convenient to the wards. Berne is one of the Swiss schools most frequented by women, of whom about fifty are at present in attendance. I was told by one of the professors that they were good students; as a rule, very attentive and indus-

trious, but not always sufficiently prepared in the preliminary subjects. Those at the lecture were all young, but I did not see one who looked likely to become the Trotula of the twentieth century.—*N.Y. Medical Journal.*

Notification of Infectious Disease and Mistakes in Diagnosis.—The practice of notification to the health authorities of all cases of infectious disease with their immediate isolation is obviously of such great value as a prophylactic that it is becoming almost universal. In England the optional act, which only came into force less than a year ago, has been voluntarily adopted by authorities which have jurisdiction over about 12,000,000 of people. This, with the compulsory act applied to London, and with those fifty-six towns or localities which had previously obtained powers of compulsory notification by special local acts, makes compulsory notification now practiced with respect to about 20,000,000 of people. In Canada, we learn that the practice is generally very fairly carried out. A few fines for neglect, in certain places, have been imposed. With the tremendous gain to the public conferred by this practice, great responsibility is thrown upon medical practitioners, especially from possible mistakes in diagnosis. Some practitioners in the United States have encountered actions for heavy damages from mistakes in this way, and there has been some serious trouble of a like kind in this country. Such mistakes are liable to occur to almost any physician, especially without the utmost skill and care. According to Dr. Russell, medical officer of Glasgow, of 1,499 consecutive cases admitted to Belvidere Hospital as suffering from infectious disease, 114, or 7.6 per cent., did not suffer from the disease which they were supposed to have when they were sent in; and of that 114 no fewer than 85, or 5.7 per cent. of the total cases, had no infectious disease at all and ought not therefore to have been removed. There are two principal remedies for the troubles to practitioners liable to arise from errors of this kind in the practice of notification. First, physicians, wherever the practice is enforced or carried out, should insist on having provided, in connection with

the isolation hospitals, observation wards for the reception of cases of doubtful diagnosis. Physicians have generally "taken kindly" to this practice of notification for the public good, and the least the public can do is to afford this protection where possible; and it could usually be made possible. Such provision obviously provides also for the public safety, and it is little short of criminal neglect when such wards not provided. The other remedy we will but merely name: it is better facilities for the study, and closer study, by students at the schools, and even by physicians at post-graduate schools, of clinical cases of infectious disease, in order that the greatest skill may be brought to bear on diagnosis. This is strongly urged by Dr. Russell.—*Canada Health Journal*, Sept. 1890.

Classification of Vesical Tumours. (By Sir Henry Thompson, F.R.C.S.)—The classification presented here is founded to a considerable extent on my own experience of the forty-one cases operated on and now reported, each tumour having been examined by a competent pathologist; but besides observing several other cases in consultation, as well as taking the supervision of some in which, for various reasons, no surgical procedure was admissible, I have made a study of numerous preparations in the London museums. From these sources chiefly the following varieties of vesical tumour are enumerated and classified, commencing with the most simple.

1. The *mucous polypus*—which is not to be confounded with prostatic outgrowths of similar form, these being inadmissible in any scheme comprising vesical tumors—resembles polypi of the nasal cavity, but is more compact and solid in structure. Hitherto this product has been found in young children only.

2. *Papilloma.* The papillomatous growths appear in two forms, the essential character being that the structure of the characteristic portion always resembles that of the natural papillæ occurring in certain parts of the digestive canal. The constituent element consists of a prominent fold of simple membrane, supported by connective tissue containing a large arterial twig as a central axis, while the outer surface of the membrane is closely covered

by a layer of cylindrical epithelium, or, much less commonly, by the ovate or spherical variety. Formerly these growths were called ' villous,' to which it was usual to add the term ' cancer,' although the implied allegation was entirely unwarranted by evidence. When these prolongations are very long, slender, and floating in the bladder, the papillomatous growth is termed ' fimbriated.' When a considerable portion of fibrous tissue is present, rendering the growth more solid, the designation ' fibro-papilloma ' is more appropriate. These growths form very slowly at first, but when developed give rise to repeated attacks of hemorrhage, which in time become continuous and copious, thus terminating life. They are the most commonly met with of all vesical growths, and their symptoms have been often mistaken for those of renal disease. Microscopic examination of the urine will sooner or later (especially if the bladder is washed out with water and the *débris* scrutinised) detect specimens of the growth, which are quite characteristic, and absolutely decisive that the growth is present. Moreover, on careful inquiry, it may be ascertained that the bleeding is found occasionally, sometimes frequently, to appear in a manner which can rarely or never be met with in renal hemorrhages. The patient commences an act of micturition with clear or almost bloodless urine, and at the end of the act bright florid bood is mixed with the stream, or appears alone at the close. This fact determined, the bleeding is without doubt vesical, and if for a considerable period of time there is still but little pain experienced, and the act of micturition is, as a rule, not very frequent, the bleeding is certainly not due to a sarcomatous or carcinomatous growth, and is therefore very probably significant of papilloma.

I may remark here that I know no styptics which appear to control the hemorrhage from this source, although I have seen all the known remedies abundantly tried. Treatment by local injections is apt to provoke rather than check the flow of blood.

3. The *simple myomatous* tumours are not very uncommon ; they are not accompanied by any characteristic signs of their presence, but have sometimes a papillomatous growth on their surface. Nothing further remains to be said here in relation to

diagnosis, except that their progress is slow and the characters of malignant growth are absent.

4. Tumours made up of fibrous tissue chiefly, more or less associated with small nuclei interspersed. Sometimes these are in large quantity, a fact which leads to a graver estimate of their character, as indicating that they probably possess a tendency to return after removal. Both these and the preceding kind involve the deep structures of the bladder, and cannot be entirely separated by any operative procedure; while, on the other hand, many examples of papilloma, especially when growing from a pedicle, may be completely removed, and often do not return.

5. *Epithelioma*, the nature and characters of which in the bladder are those of this growth in all other parts of the body.

6. *Scirrhus*, or 'cancer' properly so called, not occurring until after the middle term of life has been reached, is occasionally met with in the bladder.

7. The *round-* and *spindle-celled sarcomata*, formerly known as 'encephaloid,' are sometimes met with in children, but affect not infrequently the adult also. There are three cases of these sarcomata in the series. One, No. 32, is at present unique as regards the bladder. The preparation was examined by one of our most practised and able pathologists, Mr. Shattock, curator of the museum of St. Thomas's Hospital, who reported on it as follows:—

"This tumour consists in part of perfectly formed cartilage, and in part of sarcoma tissue. The latter is of the spindle-celled and mixed kinds, and the process of its chondrification is readily traceable; the cells become surrounded by matrix, and by their subsequent multiplication and secondary capsular formation there is produced the characteristic structure of ordinary cartilage."

The diagnosis of malignant disease of the bladder is not difficult. Examination of the rectum furnishes valuable information. Scirrhous growth is very hard, irregular in form, and is thus unlike ordinary senile prostatic enlargement—that is, the so-called 'hypertrophy' occurring in elderly men. The sarcomata are full and rounded in form, more elastic to the touch than 'senile enlargement,' and far more rapid in their rate of increase in size.

Epithelioma, slow and restricted in growth, may exist several years before presenting a tumour sufficiently dense to be recognized by palpation or by sounding. In malignant disease pain is soon a more or less constant symptom, and some hemorrhage is liable to appear, increasing at a later date ; it is thus distinguished from papilloma, which is rarely recognizable by the rectum, or even by the sound, manifests its presence first by hemorrhage, often at an early date, and is rarely painful until quite the later stage of its history. In all the three forms of recurring or malignant growths, microscopic observation may corroborate a diagnosis based on the signs and symptoms mentioned, but cannot by itself establish one.

I shall now offer a brief summary of the results of the operations which I undertook in these 41 cases, of which 34 occurred in male and 7 in female patients.

I. In seven cases (Nos. 1, 20, 29, 31, 34, 36 and 38), there has been no reappearance of symptoms of any kind, three years having elapsed since the most recent, and nearly ten years since the first case of the series. All are living and well except No. 20, who met his death by accident some two years after, but the bladder was examined by his medical attendant after death, and sent up to the museum of University College Hospital, London, where it now is, together with the tumour originally removed ; no trace of reappearance can be fonnd in it. In every case but one the nature of the tumour was papilloma, the exceptional case, No. 20, being probably a myoma. In three cases the growth was removed by forceps through a perineal incision ; in one female case, dilatation of the urethra sufficed ; and in the three remaining cases by suprapubic operation.

II. In fifteen other cases death occurred at different periods. varying between three days and four months after the operation. Ten of these were the subjects of malignant growth of some kind, epithelioma and sarcoma in two or three varieties. Two were papilloma, apparently simple. The rest were myomatous, but containing nuclei which aroused suspicions of a grave character. It is worthy of remark that in five of this series papilloma was also present on the surface, and therefore probably as a secondary product to a more important growth, as myoma or sarcoma.

III. Nineteen patients remain, who lived after the operation for periods varying from about a year or a little less, up to four years, one of these being now in good health (two years after the operation), much stronger and stouter than before, but is just beginning to note the reappearance of a little blood, and is, therefore, not entitled to be regarded like the first class, or those in whom the recovery was permanent.

I think it will be admitted, as the result of all past experience, that the subject of a bleeding vesical tumour invariably dies of his disease more or less speedily, unless its removal is accomplished. Every instance, then, of operation which effects this and produces a permanent cure is a life absolutely gained by the surgical art. But when this is unhappily not to be accomplished, a partial removal has obviously prolonged life, and afforded an interval of renewed health and freedom from pain, etc., sometimes of great value to the patient.

Thus the foregoing results, although of necessity furnishiug many instances of failure, demonstrate our power to offer invaluable aid to a certain proportion of otherwise fatal cases. For no individual case is it possible to predict the issue of an operation. Not until the scalpel has opened the way and permitted the operator to lay his finger on the growth, and thus ascertain its physical characters, can he say whether it can be completely removed ; and when it is not possible to do this, the probability of return must be feared.

In all cases in which we can ascertain the presence of malignant disease—carcinoma, sarcoma, epithelioma—I am strongly of opinion that it is useless to attempt to remove the growth, and that such interference is liable to aggravate the sufferings of the patient rather than otherwise, and perhaps hasten his end.

Setting these cases aside, I am not less strongly of opinion that it must almost invariably be our duty to recommend an operation for removal, not only when the disease is obviously not malignant, but when there is any reasonable doubt on the subject, which will in the course of the operation be cleared up, and the procedure can then be limited or not, according to the judgment of the surgeon.

In relation to cases in which doubt may arise it must not be forgotten that papillomatous growth may be present as a secondary growth upon another form of tumour in the bladder, so that its presence among the *débris* examined does not demonstrate the presence of a simple uncomplicated papilloma. No doubt in a large majority of cases the simple growth alone is present, but the exceptional condition is not very rare. It is on this account that I often practise and advise a small perineal incision to be made in the median line, opening the urethra in the membranous portion, so that the surgeon may introduce his index finger into the neck of the bladder. This proceeding I have recommended and much practised during the last ten years in obscure cases, under the title of "Digital Exploration of the Bladder." When the patient is thoroughly under the influence of an anæsthetic firm suprapubic pressure enables the operator in all ordinary cases to determine with his finger the size and nature of the tumour. If it be a simple pedunculated growth, as papilloma often is, the introduction of an appropriate forceps will mostly suffice at once to remove it. If, on the contrary, it is found to be large, occupying a wide base, or is otherwise evidently unfitted for treatment by the simple proceeding referred to, the suprapubic operation can be at once performed in the usual way. This I have frequently done, and have never found that the preliminary incision described interferes in any way with the subsequent operation, which is conducted precisely as if no such 'exploration' had taken place. When a large prostatic or other tumour is encountered in the rectum it is possible that the finger may not reach the bladder, and so may be incapable of exploring the cavity, but in these circumstances the "digital examination" is wholly unnecessary, the condition in question demonstrating that the case is not one of simple removable tumour, but is probably an example of malignant growth. But it may be said that the diagnosis of a vesical tumour may be readily established by means of the Leiter endoscope. I long ago tested its value, having employed not only the earlier but the latest and most improved form of that instrument. Let me say, first, that the employment of it in the cavity of the bladder involves much irritation in some

cases, far more than that which follows the use of the sound. Secondly, that in presence of a tumour which the slightest mechanical contact causes to bleed the observation is mostly an imperfect one. Thirdly, that the instrument is rarely necessary to determine the fact of the tumour's presence, that being ascertainable in nine cases out of ten by the ordinary methods already alluded to. Lastly, it is assumed to furnish the means of ensuring a view of the growth which shall enable the operator to determine whether it is peduncular and easily removable, or the reverse. In regard to this important matter, I admit that the object may be attained, but in the majority of cases I am certain it cannot be thus decided, as when the tumour is not seen in profile, and when the bleeding occasioned permits only an imperfect view, a far more accurate idea can be obtained by "digital exploration," which never produces the severe cystitis, becoming chronic and confirmed, which unhappily too often follows prolonged manipulation with a rigid cystoscope in the diseased bladder of an elderly patient. I have performed "digital exploration" upwards of a hundred times and have never met with any serious, far less fatal, issue to that simple operation.

Finally, supposing that by any process whatever the presence of a manifestly carcinomatous or sarcomatous growth has been discovered, I can say nothing, as already indicated, in favour of operative measures for its removal. It is always possible to extirpate the growth, which largely involves the walls of the organ itself, and rapidly reappears after the attempt has been made, although large masses may have been taken away and an apparently almost empty cavity has been left as the result of the procedure.

The palliative treatment for all patients thus affected consists in the avoidance of habits, occupations, and any amount of exercise found by the experience of each individual case to produce serious increase of hemorrhage ; the maintenance of the digestive power and healthy activity of the functions which support life is as far as possible to be ensured ; and lastly, the adoption of all means, especially towards the closing stage of a case which is certainly destined to be fatal, in order to alleviate suffering which

is usually severe and prolonged, unless dealt with unflinchingly, as it ought to be in such painful circumstances. The ample use of morphine, usually most effective by subcutaneous injection, should be adopted, so that although unable in any way to check the progress of the malady we may at least mitigate the most terrible accompaniment of its distressing and inevitable course. —(*British Medical Journal.*)

Aneurysm first recognized in Fundus of the Ear, later appearing in the Neck. —This interesting case was reported at the last meeting of the American Otological Society (July 15th) by Dr. Chas. A. Todd of St. Louis. Mr. C—, aged 45, came under observation complaining of pain in the left ear and symptoms suggesting furunculus. In 1858 he had had severe otitis media in both ears for one week, followed by discharge, which ceased without treatment. Some deafness has existed since. For the past seven or eight years he had noticed a pulsating sound, at first in both ears, now in the left. On examination of the left ear there was seen a circumscribed swelling on the floor of the meatus, just in front of the membrana and entirely concealing it. It was soft and fluctuating. Filling the ear with water, a distinct intra-aural pulsation could be seen. The swelling was lanced under the supposition that it was furuncle. There was a free gush of blood, and three ounces were lost before the flow could be stopped by tamponing. No pus whatever was seen. The tampon could not be permanently removed for several days. Compression by tampon was advised to be continued at home. August, 1880, it was learned that compression had afforded little benefit. Ligation of common carotid was suggested if symptoms were considered sufficiently severe. March, 1883, patient was again seen. Electrolysis had been tried with asserted diminution in size. March, 1890, the aural tumor was still present, but in addition there was a large aneurismal swelling of the neck below the ear. The patient was then referred to a general surgeon, and has not since been heard from.—*N. Y. Med. Record.*

THE

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ETHER INEBRITY.

For a period of nearly fifty years the use of ether as an intoxicant has been common in certain parts of Ireland. Lately it is said this practice has extended to England and Scotland, and in some parts has reached alarming proportions. A leading article in a recent number of the *Lancet* directs special attention to the injuries, immediate and remote, following this method of intoxication. The writer gives an account of an ether-drinking scene witnessed in Ulster. The ether was served out in wine-glasses. The drinker first washed out his mouth with a draught of cold water, and after that tossed off a wine-glassful of ether "nate," as it was said, drinking it quickly, almost at a gulp. Both men and women took part in this indulgence, and were speedily brought into a state of intoxication, more or less complete. The practice of ether drinking in Ireland dates from the time of Mathew. This great temperance reformer succeeded in convincing several million Irishmen that whiskey drinking was very injurious, but his good works were in the majority of cases of short duration. Ether being recommended by a few as a stimulant, which caused exhilaration but not intoxication, the people naturally were not slow to test its powers, and with the result that at the present time there are a great number of confirmed ether inebriates.

The character of ether intoxication differs considerably from that of alcohol. The preliminary period of excitement is more marked, but shorter in duration. If the quantity taken is sufficiently large, the stupor state, although brief, is profound, and may prove fatal. Owing to its being rapidly eliminated,

the injuries inflicted on the tissues by ether are much less than those that result from alcohol: the chief disturbances brought about being an inflammatory state of the stomach and peripheral neuritis. The vascular and connective tissue changes so common among the alcoholic inebriates are not met with among ether drinkers.

THE CANADIAN MEDICAL ASSOCIATION.

The twenty-third annual meeting of the Canadian Medical Association, held in Toronto on the 9th, 10th and 11th ultimo, was in some respects a disappointing gathering. The registered attendance only reached one hundred and five. When we consider that there are, in the Provinces of Quebec and Ontario alone, considerably upwards of 3,000 regular medical practitioners, it does not speak much for their interest in professional work to find that only one in thirty of their number were present at a meeting organized solely for the purpose of promoting matters relating to their profession. This lack of interest in an Association which has done so much, especially in its early days, to advance our common interests is deeply to be deplored.

How to infuse a living interest into the thousands of our numbers who are sleeping the sleep of indifference is a problem of first importance.

In a scientific sense the meeting was fully up to the average of past years. All the addresses and many of the papers read were of a high order. The members of the profession in Toronto who were present exerted themselves in every way to make the stay of their outside brethren both pleasant and profitable. Dr. Ross, the genial president, was especially active in doing his utmost to make all visitors feel at home.

NOTES.

—Dr. Praeger, of Nanaimo, was the only representative from the far Pacific Coast at the Canadian Medical Association meeting. He deserves great credit for spending so much time and money to be present. His able remarks added much to the interest of the meeting.

—We were pleased to meet Dr. Muir of Truro, N.S., and

Dr. Coburn of Fredericton, N.B., at the Toronto meeting. Dr. Muir's address on Therapeutics was an able resumé of the recent advances in this subject.

—One of the most interesting papers read at the meeting was by Dr. Chown of Winnipeg, on Hydatid Tumors. He gave details of several cases that he had under observation in the Winnipeg hospital.

Medical Items.

The Adirondack Forest.—Dr. A. L. Loomis says that when he first visited the Adirondack forests twenty-eight years ago he was suffering from what was regarded as a hopeless case of pulmonary disease. After an eight months residence there he returned home perfectly restored. Since then he has constantly sent patients to this region, and from this experience he is prepared to maintain that no other such health resort exists. For this reason he is especially active in preserving the forests for this purpose. He wants the German forestry system practically applied to the Adirondack region, and so is active in the efforts made to check the vandalism of railroads and lumbermen. He wants the State to purchase the entire tract, place the region under control of a forestry commission to be managed upon scientific and business principles; the hunting and fishing privileges to be let at a definite sum, the timber cut under the direction of the commission and marketed by a responsible officer. By such supervision a new crop of trees could be marketed every thirteen years and so be a large source of income to the State, quickly paying for the bonds needful for the purchase of the tract at the first. We hope Dr. Loomis's plan may be speedily carried into operation.—*American Lancet.*

An Original Emergency Obstetric Forceps.—At the recent Nashville convention many stories were told by those in attendance, while comparing notes concerning professional experiences. One practitioner, Dr. W. C. Blackman, of Davidson County, Tenn., related his experiences in two obstetric cases. In both instances he decided that immediate delivery was necessary. The natural forces had given out. He had no forceps with him, no neighbors to call on for assistance, and he was miles from home. Fortunately in both houses there happened to be

pairs of shoemaker's pincers with stout curved handles. The latter were slipped over the heads of the children, and by pulling against the pivoted lock successful extraction was made. Both mothers and both children made perfect recoveries. One of the latter had a scar just at the edge of the hair, but the growth of the latter (the child being a girl) soon covered it up. This girl grew up into blooming womanhood and was married the week before the convention met.—*Medical Record.*

Chronic Alcoholism in a Boy of Thirteen Years.—At the meeting of the New York Pathological Society, held on the 23rd April last, Dr. H. M. Briggs presented a specimen of advanced cirrhosis of the liver, taken from the body of a boy 13 years old, in whom were found all the other lesions of chronic alcoholism. When the child was two years old he had an attack of bronchitis, for which the physician prescribed whiskey. He seemed to be fond of it, and his parents allowed him to gratify his taste whenever he desired, giving him money for the purpose. He used to drink about an ounce and a half six or eight times a day. The day of his death he purchased a larger quantity than usual, and drank it all at once. He was found some hours after in a semi-comatose condition, from which he never rallied. At the autopsy the liver was found to be markedly cirrhotic, and all the other lesions of chronic alcoholism were present in advanced degree.

Antivivisection Bitterness.—The Society for the Protection of Animals from Vivisection recently held its annual spring conference in London. The war-cry this year was "Pasteurism and Crime," and Canon Wilberforce is reported to have rejoiced in the fact that the movement to found a Pasteur Institute in England had been defeated by the Society's method of placarding the city with large posters containing the list of those who had died after treatment by the Pasteurian system. Many others indulged in bitter denunciation of both vivisection and Pasteurism, as being the means of brutalizing the otherwise honorable and useful profession of medicine. One speaker likened vivisection to the liquor traffic, and said that inasmuch as it would be impossible to regulate either by laws, they must be torn out root and branch. Other speakers said that they could prove by competent medical testimony that humanity had been injured by the attempt to apply the results of investigations made on the inferior animals. Altogether, much zeal, though but little knowledge, was exhibited by these people, who are friends to every animal but man.—*Medical News.*

THE

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Original Communications.

ADDRESS

DELIVERED AT THE OPENING OF THE FIFTY-EIGHTH SESSION OF THE FACULTY OF MEDICINE OF McGILL UNIVERSITY, OCT. 1ST, 1890.

BY R. CRAIK, M.D.,
Dean of the Faculty.

GENTLEMEN :—It has long been the custom in this as in other medical schools, for the teachers in turn to deliver to the students and others, two discourses or addresses in each year. One usually known as the valedictory, at the end of the winter session, and more or less of a retrospective character, dealing with the session which has passed, and offering words of kindly counsel and good wishes to the graduates who are then to leave us. The other at the beginning of the following session, and more or less prospective in character, welcoming the new as well as the older students, and mentally shaking hands with each of them, preparatory to joining in the mutual labors of a busy session.

It has fallen to my lot to be asked to deliver this opening address, and it is with feelings of sincere pleasure that I offer to every student, on behalf of the professors and teachers, a cordial welcome and our best wishes for their welfare, physically and socially, as well as professionally.

In the remarks which I propose to address to you to-day, I have thought it might not be amiss to depart somewhat from the beaten path of introductory lectures, and to take a somewhat retrospective, as well as a prospective, view of the changes which medical education in general has undergone

during the present and perhaps the preceding generation, and the changes which it may be expected to undergo in the generation which is to follow. In doing so I may be pardoned if I take my examples and illustrations largely from the experiences of our own school; for I think I may fairly claim for it that, so far at least as this continent is concerned, it has always since its commencement maintained a leading position, in the thoroughness of its teaching, in the high and advanced standard of its curriculum, and in the reputation and prestige which its graduates have carried with them to every part of the world.

Medical education half a century ago was a much more primitive and simple process than the elaborate and complex systems of to-day, and yet no part of the present system is superfluous or could be omitted without producing dangerous weakness, and if we are to keep pace with the present rapid progress of medical science and medical discovery, we must be prepared for the same development and increase in the future as we have experienced in the past.

Up to a comparatively recent date, the system of medical apprenticeship formed an important part of medical education, and indeed necessarily so, for in the absence of the present facilities for hospital clinical instruction, no other means were accessible to the student, by which he could learn to apply in actual practice those principals and precepts which he had learnt from his books or in the lecture room. In the old-time curricula, one or two years of private study with a private practitioner was accepted as equivalent to the same time passed at the schools; and even at the present day the licensing board of this province concedes the privilege of one year's study with a private practitioner as an optional part of the full four years' curriculum. In the better equipped schools of the present day this system has passed almost entirely away, and has been replaced by the more systematic and skilled instruction in the hospital wards and in the laboratories. Didactic lectures also formed a far more important part of a medical course in former years than they now do, and indeed private medical instruction by private practitioners and didactic lectures in the class room, with perhaps a few demonstrations in anatomy and chemistry, may be said to have made up the sum

of medical education until within the last twenty or five-and-twenty years.

But such antiquated methods could not long withstand the contagious example of the modern precesses of scientific investigation and research in other departments of natural science, and the dry lectures delivered in nearly or quite the same words and order from year to year, and which might with as much or more profit have been delivered directly from the text book, gradually began to be replaced by others of a more demonstrative kind, and to be illustrated by diagrams, plates and apparatus, and ultimately by specimens and instructive examples, both living and dead. It thus came about that the didactic lecturer, with his well-worn manuscript, and who found it no more difficult to lecture to four hundred students than to four score, began to find it necessary to improve his methods, or to find that his usefulness and his occupation were alike slipping away from him; while the practical teachers and the demonstrators found more and more calls upon their time and energies, and found that more students meant for them more labor and more responsibility, and after a time more help; so that the descriptive lectures were at first supplemented, and afterwards many of them replaced, by practical demonstrations and individual teaching, and the laboratories and working rooms gradually grew to be more numerous and important than the lecture rooms.

A similar change has also been going on in the methods of hospital teaching: The old-time custom of "walking the hospitals" is almost a thing of the past. The student no longer lounges through the wards as if his object were to kill time, if not the patients, and the attending physician or surgeon no longer hurries from patient to patient, contenting himself with the attentions and instructions to the patients themselves, which their safety demands. But the students are now taken into his confidence; they become helpers to him and to the patients, while they themselves receive help, experience and instruction which they could never hope to obtain in any other way.

It will thus be seen that the changes which have come about in the manner and methods of teaching medicine have been somewhat radical in their character, that, in fact, they have

turned the old system upside down, The practical and personal parts of the teaching which in the schools, at least, were subordinate to the descriptive and didactic, have now become the most prominent and important, while the more formal lectures as such, are mostly confined to those fundamental and elementary facts and principles, which must always form a necessary foundation for practical knowledge.

But if the changes in the methods of medical teaching have been great and have added greatly to its effectiveness, they have also rendered necessary a greatly increased expenditure. A systematic course of lectures once written out, and even when illustrated with plates and diagrams or simple apparatus, is a comparatively simple affair, and can be maintained year after year at little expense, and can be made to serve for three hundred as well as for three score; but with practical teaching and demonstrations it is entirely different. One teacher may be able to give proper personal attention to the practical work of say forty or fifty students, but if the number is increased to two hundred or two hundred and fifty, it will require five teachers instead of one to do the work. It does not necessarily follow that the expenditure must increase in the direct ratio of the numbers, for qualified assistants may often be employed at less expense, but in any case augmented numbers in practical classes means increased expenditure.

Laboratories also are expensive affairs. Their construction, equipment and maintenance are attended with great and continued expenditure. Technical apparatus is usually expensive on account of the comparatively limited demand and consequently limited supply, and is usually perishable and difficult to keep in order and requires frequent renewal, and the cost of maintenance, even with the greatest care, is always considerable.

Nor does it seem at all likely that there is to be in the future any material diminution in the cost of practical work in connection with medical education, and as practical work is still likely more and more to replace mere descriptive teaching, the necessary expenditure may be expected rather to increase than to diminish.

But, it may be asked, are not the fees from the students intended to meet these expenses, and has not the cost of a

medical education been increased to the student in proportion to the cost of providing it? The answer is, that medical teaching, properly so-called, has never been self-supporting, and is now less so than ever before. It is true that the aggregate amount of the student's fees is now greater by some twenty or thirty per cent. than it was five and twenty years ago; but in the same period not only has the aggregate of school expenditure been more than doubled, but in some of the departments it has been even trebled and quadrupled, and all this while practising the most rigid economy in every particular.

Nor does there seem at present to be any remedy for this disparity between the price paid for a medical education and the increasing cost of providing it; for the scale of fees is virtually controlled by those schools which have the fewest real advantages to give to their pupils, while their degrees have the same legal value as the best in the land. There are many and strong reasons, also for considering it most undesirable to attempt to impose any additional burdens upon the medical student of to-day. He has sufficient to contend with in the increased requirements of the ever extending curriculum in matters connected with his preliminary examination, and in the vexatious differences and re-examinations which are brought upon him by our absurd provincial medical laws.

Having thus endeavored briefly to outline the important changes which the system of medical education has undergone in the past, and is likely to undergo in the future, let me endeavor to show also very briefly how these changes have affected our own school, the Faculty of McGill University, and how we have been enabled to meet them.

I think it may be safely taken for granted that nearly every doctor worthy of the name, who loves his profession, also loves to talk about it, and being fully impressed with the noble character of his calling, he naturally longs to impart his knowledge to others. This is the true missionary spirit, and bearing this in mind it will be more easy to account for the fact that medical schools are apt to break out at most unexpected times and in most unexpected places, and are apt also to exhibit most wonderful vitality under adverse circumstances. They may be starved, they may be persecuted, they may be legislated against and they may seem to be blotted out,

but they will crop up again and go on with their work with a persistency and a dogged determination which are but the evidences of a powerful, though, perhaps, unrecognized impelling force. It was in some such way as this that our school first came into existence, and it has been in great measure the influence of some such impelling force, that has enabled it to overcome the many and great difficulties which it has had to encounter in the course of its career.

It was sixty-six years ago, that is in 1824, four earnest and energetic men, Drs. Robertson, Holmes, Caldwell and Stephenson, founded and opened the nucleus of this school, under the name of the "Medical Institution." It was continued under that name until 1829, when it became the Medical Faculty of McGill College. Of its early history little need be said. It was simply a struggle for existence, in which failure much of the time seemed quite as probable as success, and when, during the political troubles from 1836 to 1839, it was obliged to close its doors, it seemed as if its light had gone out forever.

But that inherent love for teaching which so largely pervades the ranks of our profession, and which had been sufficient to open the school in 1824, was again sufficient to revive it in 1840, when its classes were reopened, and shortly afterwards, in or about 1842, it was almost entirely reorganized, its corps of teachers considerably enlarged, its curriculum extended and improved, and comfortable quarters were provided for most of its classes in the central building now occupied by the Faculty of Arts.

Up to this time the assets of the school may be said to have been *nil*. There was neither museum nor library worthy of the name, and each teacher worked for his own hand, and furnished his own equipment of every kind, paying for it as best he could out of his few straggling fees, and trusting to his private practice to support himself and his family. But the school had now a local habitation and a name; it was the Faculty of Medicine of McGill College, and it was housed in the college buildings.

From this time its success was no longer doubtful. There sprang up an *esprit de corps* among the teachers, among the students, and among the graduates, which became an important factor in the work, and which has continued and grown

ever since, and has contributed in no small degree to the reputation and prestige of the school, and has encouraged and helped the faculty in its efforts to maintain the high standard of excellence at which it has always aimed.

At this period, and for many years thereafter, the teaching was wholly of the didactic kind. The only real exception was practical anatomy, which had its special demonstrator; and with the help of the advanced students a few lessons and experiments were given in operative surgery and in chemistry. In 1845 the chairs of Clinical Medicine and Clinical Surgery were established.

Encouraged probably by the continued and growing success of our school, the St. Lawrence School of Medicine was opened in 1851, with a strong staff of teachers and with its class rooms in the heart of the city. As the college buildings were at that time looked upon as being remote from the centre of the city and from the General Hospital, it was feared, rightly or wrongly, that the more central site of the new school might attract away from us some of our students. It was resolved, therefore, to remove our own classes also to a more central site, and as no university funds were available for the purpose of furnishing us with a building, three of the professors purchased a lot and put up the old brick building on Cote street, where, for twenty years, the work of the school was carried on, and where many, if not most, of the present staff of professors received their medical education.

Several important steps were taken and some important changes made while the work was being carried on in the old Cote street building. It was here that our beloved Principal, Sir Wm. Dawson, took his place at our head, and enrolled himself as one of our co-workers, as professor of botany and zoology. It was here also that the next step in practical teaching was taken, by the establishment of a chair of practical chemistry under Professor Girdwood, though for many years his work had to be carried on without the advantage of a college laboratory. It was here also that the members of the Faculty, not wishing to be outdone even in the ornamental aspect of their work by the more favored faculty of arts, founded the Holmes' gold medal in 1865, paying for the die out of their hard earned fees.

The history of these years was one of steady and continued progress, not only in the number of our students and graduates, but in the more thorough and practical character of the teaching, and in material improvements in the curriculum, more particularly with reference to the preliminary examinations and the division of the professional examinations into primary and final.

But the building which had served our purpose so many years had latterly been inconveniently overcrowded, and more room was needed, not only for the larger classes, but to accommodate the growing library and museum, and to afford room for contemplated improvements in the way of laboratories and working rooms in several of the departments. At this juncture, and guided chiefly by the wise counsel of Sir Wm. Dawson, we resolved once more to retrace our steps, and to ask the college authorities to receive us again into their classic precincts. The governors responded generously to our appeal, and in 1871 the front or main portion of the present building was built for us and placed at our disposal.

But, willing as the governors were to come to our relief, the means at their disposal for this purpose were very limited, only sufficient to give us the building with its bare walls, and without fittings or furnishings of any kind. These, with all the necessary equipment of laboratories, class rooms and other requirements for improved methods of teaching, had to be provided by the members of the faculty from their own personal means. Our late dean, Dr. Campbell, headed the list with one thousand dollars, and the rest of us followed as best we could with smaller sums, until a sufficient sum, amounting to a good many thousand dollars, was forthcoming, the building was made ready for occupation, and the work itself, under greatly improved conditions and surroundings, was begun in the new building in the autumn of 1871.

Closely following upon the opening of the new building came the next important forward step in the matter of practical teaching. Laboratory work was begun in 1874 in physiology, histology and pathology by Dr. Osler, one of our own graduates, and fresh from the laboratories of the most distinguished workers and authorities of Europe.

The improved methods of teaching and the increased facili-

ties had the effect of attracting to us a constantly increasing number of students, until it soon began to be apparent that our new premises, commodious as they seemed at first to be, were rapidly becoming too small for our steadily enlarging classes. The increased cost also of the practical teaching was beginning to tell seriously upon our resources, and we had again to look about us for the means of adapting our income to our increasing needs and to our increased expenditure. It was about this time that the faculty had the misfortune to meet with a very serious loss in the death of its dean, Dr. Campbell, one who for more than forty years had devoted his great talents and his great influence to the service of the faculty, and whose loss at the time seemed to the faculty to be almost irreparable.

But Providence, whose ways are often inscrutable, seemed even to overrule this misfortune for the good of the faculty; for it put it into the heart of our present noble Chancellor, Sir Donald A. Smith, while listening to a eulogy of Dr. Campbell, by his successor, Dr. Howard, to offer to the faculty the munificent sum of $50,000 as an endowment fund, on the condition that the citizens of Montreal should contribute a like sum for the same purpose; the two sums to be called respectively the Leanchoil and the Campbell memorial funds. I need not say how gladly the Faculty accepted the generous offer, nor how eagerly they set to work to collect the stipulated sum from the citizens. Nor need I try to tell how well and generously they were met by many of the citizens, nor how they themselves personally tried to add their full share to the subscription. Suffice it to say that the amount was soon raised, the sum promised by Sir Donald was promptly paid over, and the faculty found itself apparently relieved of all its difficulties by the magnificent endowment of one hundred thousand dollars.

We found ourselves, therefore, in 1883 with a handsome endowment, with a growing reputation, with a large staff of practical and enthusiastic teachers, with a constantly increasing number of students, and with a building *too small* to accommodate them. It thus became necessary to take immediate steps to enlarge our building, and to provide additional accommodation for our growing classes. We again applied to

the governors of the college for the required additions to the building, hoping from the increased income from the endowment, to be able to meet the necessary expenses of fitting up and maintaining the new buildings. To our great disappointment, we found that the governors were without means at their disposal from which to carry out our wishes, and their only alternative, therefore, was to borrow from our fund the necessary sum required for the erection of the additional buildings, with a promise, of course, of the repayment of the amount so soon as the condition of the finances of the university made it possible to do so. The sum thus withdrawn from our fund amounted to nearly one-third of the whole, and the result has been a source of considerable embarrassment to us, for it has deprived us of a large portion of our expected revenue from this source, and has left some of our important practical departments without that material aid which we had hoped to give them, and has to that extent impaired their usefulness and interfered with the reputation and growth of the faculty as a whole.

But that is not all, nor even the worst. The buildings, which five years ago seemed large enough to serve us for a generation, are rapidly becoming full to overflowing, and we must look about us again almost immediately for increased accommodation. What is to be done? Are we to let students leave us for want of room? Are we to send them to places where their education will be less efficiently carried on? And are we to confess our weakness, and say to the world that we must shut our doors in the faces of those who are knocking at them for admission.

Gentlemen, I know that we shall do none of these things. It cannot be possible that we should be asked to do any of them. We will ask our friends to help us. If necessary we will take our hats in our hands and go through the streets and ask them to help us. And they will help us. They will not allow the tide of our success to flow backward. They will not allow the standard of our medical education to be lowered. They will not allow our doors to be closed to those who are seeking to come in; but they will help us to open them still wider. They will help us to raise still higher the high standard of our medical teaching, and they will help us in sustain-

ing before the world the reputation of our faculty and of our university, which are so dear to all of us.

And, gentlemen, if we are to ask and to expect our friends to come to our relief and to give us of their means to help us out of our difficulties, what have they a right to expect of us in return? Have they not a right to expect us to give full value for all we have received? Undoubtedly they have, and let us see to it that that full value is given in no stinted measure: Let our benefactors of the future, like those of the past, see that their benefactions have been put to the very best of uses, that they have neither been wrapped up in a napkin and buried in the earth to rot uselessly away, nor have they been squandered and frittered away in idle experiments or useless display. No, gentlemen, let us prove to them that we are in downright earnest in trying to make the most of the means which they have placed, and which they in the future, let us confidently hope, intend to place at our disposal.

And may we not reasonably claim for our profession that it does confer great benefits not only upon private individuals and public charities, but upon the community at large, upon the country itself, and even upon the race in every part of the world? Think of the millions of lives which Jenner has saved by his discovery of vaccination. Think of the benefits and the relief which Pasteur has bestowed upon his fellow-men by his researches into the cause of the failure of the silk trade by diseases in the silk worm, and latterly by his skill in robbing that most dreadful of all diseases, hydrophobia, of most of its terrors. Think of what the wise counsels of Mr. Simon, as medical adviser to the Privy Council, has done for the masses in sanitary and social matters in England. Think of the labors of Koch in unearthing the consumption bacillus, and in our own country, in matters political and social, as well as professional, let us think of the important part which they have played in the development and progress of our institutions, and of the influence which they have wielded among our young and growing communities. Look at the oldest of our graduates, Joseph Workman, who probably did more than any man now living to ameliorate the condition of the insane in our asylums. Look at Dr. Maurice Bucke, another of our graduates, at the head of the asylum near London, following

closely in his philanthropic footsteps. Look at Dr. Church in our Legislative Assembly, on the Bench, on the Board of Governors, an honored and trusted counselor. Look at Sir Charles Tupper, our High Commissioner and framer of treaties; and look at our graduates scattered throughout the growing towns and villages of our great Northwest, and each a centre of culture, intelligence and influence, whose advice is sought on almost all subjects, and who probably do more in a young country to impress their ideas and individualities upon the plastic elements of the growing population around them than any other class of persons whatsoever.

But to come down to our own institution, to the Medical Faculty of McGill College, what is it that gives to its graduates the high rank to which they attain wherever they may go? It is due to no one cause, but to a combination of causes. It is due first to the fact that we strive to make their education as thorough as possible from beginning to end. It is due also to the fact that we try as much as possible to keep the whole training of the student in their own hands, and that we do not encourage him to wander about from school to school, taking a little from one and a little from the other, to the confusion of his ideas and the weakening of his character. But, lastly, and most of all, we aim at making our graduates not mere medical and surgical automata, not mere empirics and slaves to authorities, who prescribe for diseases according to their names, or because some Professor This or some Doctor That has said that it is the proper thing to do; but we aim to make them thoughtful and philosophical men; men who are accustomed to think for themselves, and who are able to give a sufficient reason for the faith that is in them.

We endeavor also to impress them with a full sense of their great responsibilities—that their sins of omission may be quite as serious as their sins of commission—that it is their duty not only to save life, but to save health and to save organs, and that the man who knowingly allows a curable disease to permanently damage a heart or a lung, or who allows a continued high temperature to inflict serious injury upon a sensitive brain or nervous system, is quite as much to blame as the surgeon who would lop off a limb which a little more skill or

trouble might have saved, or who would risk a dangerous operation to relieve some temporary inconvenience.

Gentlemen, time will not permit me to pursue this subject further. I have endeavored to show the effect which changes in the methods of modern teaching have had upon our school. How it has increased our expenditure, while it has also largely increased our efficiency. I have endeavored to call attention also to our efforts to cope with our difficulties, and I have endeavored to show the crippling effect which want of means is likely to produce in the near future. Our most pressing needs are, first, the restoration as soon as possible, of the sum borrowed from our former endowment. Second, a provision for the endowment of a chair of Practical Pathology, which is greatly needed; and third, a sum set apart for building extensions which must become necessary in the near future. There are other matters which I would fain mention, such as a residence for medical students, and extensions of practical teaching in other departments; but these must not be insisted upon at present.

In conclusion then, let us endeavor to accomplish our wishes by all acting together, and laboring to the same end. We will look to you, students, to show yourselves diligent and earnest in your work; we, your teachers, will endeavor to do our full share. There shall be no drones among our workers and no drags upon our wheels of progress; and we will look to the generous public and to the large-hearted men and women, who have so often before come to the relief of our distressed educational institutions, and let us hope and pray that Providence may put it into the heart of some of them to lift us out of our present difficulties, and set us up again on the high road to progress and prosperity.

PERI-URETHRAL CELLULITIS AND URETHRAL FISTULA.*

By Sir James Grant, M.D., K.C.M.G.

There are two varieties recognized of this disease, one of which occurs in isolated patches of small size in and about the penile portion of the urethra; and a second, forming one continuous mass between the layers of the triangular ligament behind the bulb. In the latter the inflammation is much greater than in the first, and although it may result from blows or falls on the perineum, it may also be the result of a small point of follicular ulceration behind a stricture, the urethral wall becoming gradually pierced, resulting in the rapid spread of inflammation in the superjacent cellular tissue,—in fact, *urethral cellulitis* with its circle of associations, as in the following case I now present to this assembly.

Feb. 16th, 1879.—R. W., æt. 40 years; regular conformation of body, moderate stature, spare habit generally; facial expression indicative of anxiety. Scrotum and perineum much swollen, quite tender over a considerable part of their surfaces, the evidences of inflammation, the result of urinary escape and infiltration being undoubted. Said to have voided urine naturally the day previous, but being dull and languid at the time was unable to give any positive information. Tongue coated; pulse 110; temperature 102°; bowels inactive, and hypogastric region also considerably swollen and painful on pressure. From the 15th to 18th peritonitic symptoms were well defined, associated with feeble pulse. Without delay free incisions were made in the perineum and linseed poultices regularly applied, which afforded great relief. At this stage I found it impossible to introduce a catheter into the bladder. Turpentine fomentations over the abdomen as necessity demanded.

History.—In 1869 contracted gonorrhœa, which was unusually acute in its character, having continued more or less for a period of full three months. In 1874 observed a gradual lessening of power in urination, the stream being small, divided and

* Paper read before the meeting of the Canadian Medical Association, at Toronto, September. 1890.

irregular. At this date he resided in Western Canada, and was treated for stricture. On the night of Feb. 15th, '79, he was attacked with cold chills, followed by high fever and entire suppression of urine; severe pain in the perineum associated with the well-defined indications of urethral rupture and urinary infiltration. The great difficulty in passing urine and the sudden relief marked a history undoubted as to character. Ordered a saline enema and inflamed part well sponged with warm water. Free escape of urinary secretion through incisions.

Feb. 21*st.*—Quite a large portion of the integument of scrotum and perineum sloughed, gangrenous discoloration having indicated that termination. An opening in the membranous urethra fully three-quarters of an inch in length was the result of this destruction of tissue. The floor of the urethral canal was freely exposed, from which urine escaped quite freely. System well supported by liberal diet and, in addition, the free administration of iron and quinine. After the complete separation of the sloughs, febrile symptoms gradually subsided and the improvement as to general health was very marked. Rupture and extravasation having taken place prior to coming under my care, free incisions were at once made and poultices applied constantly.

Feb. 27*th.*—Febrile symptoms having about subsided, and the functions of the stomach and bowels become moderately normal, the question now arose how best to close the *urethral fistula*. The extensive loss of tissue from the urethral channel, consequent on the sloughing process, the result of decomposed urine, rendered the operation of "urethroplasty" very difficult. Having observed a most marked disposition towards the formation of soft, pultaceous and yet vigorous granulations, giant-like in character, about the seat of the urethral opening. I accepted the condition and continued the free use of poultices for several days longer, until the growth of granulation tissue was sufficient to cover the opening *in toto*. This being accomplished I decided to test the vigor of the newly-formed structure, plastic in character and evidently ready to be moulded into urethral form, aided by nature's conservative power and energy.

March 1*st*, '79.—A number seven elastic catheter passed into the urethra, entered slowly through the pouting granulations and almost unexpectedly reached the bladder, the flow of urine through the instrument being quite free and natural. Taking advantage of the position, the catheter was retained *in situ* for about three days, during all of which time little or no urine escaped from the fistula. In order to promote firmness and strength of tissue, and give it direction in the formative process, the surface was brushed several times with a mild solution (nitrate of silver). At the end of third day catheter removed, and urine voided through natural channel, unattended by escape otherwise. The integument over the scrotum and perineum formed rapidly, and in three months from this date he entered upon his usual duties.

In a lecture by Wheelhouse of Leeds, Eng. (Dec. 9, 1888), on stricture, he observed: "Hitherto no true method of permanent and lasting cure has been reached. We may dilate; we may burn out; we may split; we may cut strictures, from within and from without; but up to the present time we cannot cure them—that is, both take away the obstruction and restore the parts to their *primitive condition of original health.* Whatever form of treatment we may employ, however good a result we may obtain, we never overcome the tendency inherent in every *stricture* and inveterate to recontraction." No statement could possiby be more thoughtful, verified as it is in the practice of every-day life.

In June, 1884, the cicatricial tissue which formed and closed the urethral opening had so contracted, owing to neglect in carrying out specified directions as to the free use of bougies while absent in Western Canada, that internal urethrotomy became necessary, which had the desired result. In this particular instance the opinion of Wheelhouse is verified to the letter. Granulations cultivated and supported in their efforts become a very beehive of industry towards the reparation of other tissues, and as factors in that direction we require to note carefully their modelling and constructing power even under the most adverse circumstances. The completion of the healing process, even

with the plastic power of granulation tissue, was doubtless greatly facilitated by the non-escape of urine by the fistula for fully three days, while the catheter was in the bladder. Sir Henry Thompson lays great stress on this point, to obviate which he frequently educates his patient in the habitual use of the catheter while treatment is in progress.

In the treatment of urinary fistula, it appears to me that, prior to adopting operative means for its closure, every possible degree of care should be bestowed upon the efforts of nature in the production of granulation plastic reparative power, which doubtless takes an important part in the relief of suffering humanity.

Hospital Reports.

MONTREAL GENERAL HOSPITAL.

Condensed Reports of Cases in Dr. MacDonnell's Wards.

(Reported by R. E. McKechnie, House Physician.)

Oct. 6th.—The classes in Clinical Medicine were opened on the 4th October with a general introductory lecture, after which the 3rd and 4th year were divided into their separate classes and ward work begun. There are a considerable number of typhoid cases at present in the wards, viz., seven men and five women. The cases, with a few exceptions, have not been very severe. The following are some of the interesting features presented by the cases at present under treatment.

Unilateral Sweating.—In the case of a strong young Englishman who had contracted the disease at Lachine, and who was admitted on the 4th day of a fairly severe attack, there was well-marked unilateral sweating of the face observed the day after admission. On the 7th day of the disease, when he was examined before the class, this sweating was absent.

Scarlatiniform Rash.—In one case a diffuse pale rash was noticed within a short time of admission. The neck and shoulders were the parts affected, and disappearance was complete in a few hours. No medicines had been administered.

Moore, in the *Dublin Journal of the Medical Sciences* (Dec. 1888), describes four distinct eruptions which are met with in typhoid fever. These are erythema fugax, miliary eruptions, erythema simplex vel scarlatinale, urticaria. When the scarlatiniform rash does appear it is most likely to show itself at the end of the first or in the third week, and when early it is apt to give rise to a difficulty in diagnosis, but the prodromata of scarlatina are absent, and so far as I have observed these rashes, they are of a much lighter colour, and less rough and punctiform than are those of the exanthem. They are more of a blush than a rash, and are probably connected with a disturbed vasomotor system.

Urticaria in a young girl.—In the third week of a mild attack, urticaria in distinct wheals manifested itself.

Pustules on the Abdomen.—In the case of William H., aged 23, whose case was very severe, there was extreme meteorism and turpentine stupes were applied. The typhoid spots, which were very numerous, took on a pustular form, and to the number of about a dozen formed large superficial abscesses containing half a drachm to a drachm of pus. I have twice seen this result from the use of turpentine stupes in fever.

Typhoid Fever in a Pregnant Woman; Jaundice.—Mrs. W., aged 33, was admitted at the end of the second week of the fever. She was six months pregnant. The fever took an unusually protracted form, lasting some eight weeks. In the fourth week there was an attack of jaundice, which lasted three days. She made a slow recovery and left the hospital, expecting every day to be confined. The fœtus was alive when she left the hospital.

Aneurysm of the Innominate Artery.—A man, æt. 33, was admitted Oct. 7th with the symptoms and physical signs of an aneurysm of the innominate. An important point in the history of these cases is their mode of commencement. In three other cases of which I have notes, the disease showed itself first by pain in the right side of the neck, running up behind the ear, affecting also the shoulder and the right arm. In all four cases there had been, previously to admission to hospital, a prolonged

course of treatment for neuralgia, consisting, in this case, of baths, electricity, etc. The pressure signs are very well marked. There is brassy cough and tracheal stridor. The aneurysm has itself blocked up the carotid and subclavian arteries. No pulsation in the right radials, right brachial or right common carotid. An interesting point in connection with the neuralgic pain is that he always suffered an exacerbation of pain on coughing, or on making any exertion with his arms, efforts increasing the pressure of the blood and consequently that on the nerve.

Cirrhosis of the Liver with Ascites; Repeated Aspiration.—L. G., the patient whose history was reported a year ago,* came to the clinic on the 10th October. There was evidence of fluid in the peritoneum. Two hundred ounces were withdrawn. Since February, 1889, no tapping had taken place, that is, for twenty months, and during that period he had been working daily at his butcher's stall. A return to alcoholic habits was the probable cause of reaccumulation.

Sudden Coma; Subnormal Temperature; Albuminuria; Death.

Maria D., aged 30, was brought to the hospital by the ambulance on July 14th, 1890. The case was at first thought to be one of heat prostration, of the cardiac variety. The woman, with her baby, was walking on the wharf to take the ferry to St. Helen's Island when she suddenly fell, and became pale and partially unconscious. She vomited on the way to the hospital. On admission she was unconscious and very pale ; surface cold ; pulse 66 and very weak ; breathing laboured ; temperature 95° in the axilla and 96° in the rectum. Patient was perfectly helpless, as though her extremities were paralysed. Stimulants were given and heat applied externally. In a couple of hours power returned in the right side and she became restless, but left side remained paralysed throughout the remainder of the case. Knee jerk absent. The pupils remained equal throughout, and reacted both to light and accommodation. Towards night she became very restless, tossing her head about, rubbing her forehead violently with the right hand as though the part were

* The Medical News, Oct. 12th, 1890.

very itchy, and screaming violently. The pulse was now strong (99), and temperature 101°.

The following day, with the exception of a short interval of doubtful lucidity, the patient remained unconscious. The urine was passed involuntarily ; a specimen obtained was found loaded with albumen. The left leg remained flaccid, but the left arm was rigid and pupils somewhat contracted. The temperature ranged from 98½° to 101°.

On the third day both arms were rigid, although the right was moved occasionally ; the muscles of the neck were rigid, causing retraction of the head and turning the face towards left shoulder ; the abdomen was retracted. The bowels throughout were very constipated. The coma deepened during the day ; the pulse, not reacting to stimulants, became 130 and very weak, the lungs filled with moist râles, the temperature increased to 104°, and patient died. No autopsy was allowed.

On the day she was brought to the hospital a large mass of enlarged glands was noted extending from the angle of the jaw on right side half way down to the clavicle. These were of tubercular nature, giving a clue to the nature of the case, which was probably acute tubercular meningitis.

Copious Purulent Expectoration in Empyema.

D. M., aged 42, a lumberman, was admitted on June 10th, 1890. Last November, after exposure to cold and wet, he was attacked with severe pain in the left side, with cough and shortness of breath. He stopped work and kept his bed for two weeks. The pain then ceased for some days, but the cough and shortness of breath continued. He now went to work about the lumber camp, doing light work, as he was weak. In the middle of January, as he was shovelling snow, he coughed while stooping, and a large quantity of pus was expectorated with but little effort, and formed a pool at his feet. He felt much better after this, and both cough and expectoration at once diminished. In the middle of February, after a fresh exposure to cold, he had another attack, this time in the right side, with severe stitch-like pain, feverishness, loss of appetite, cough, and shortness of

breath. The pain ceased in a few days, but the cough persisted, and was soon accompanied by expectoration, which gradually increased till, on admission, it amounted to about thirty ounces daily. He rapidly lost flesh and strength, the appetite remained poor, and he felt himself rapidly failing.

On admission, there was extreme emaciation, frequent cough, and copious purulent expectoration; the temperature ranged between 100° and 102°, but was not of a hectic type. The pulse was 120, regular, and easily compressed; heart sounds normal; respirations 27 per minute, expansion ¾-inch at the nipple level; the right side of the chest, at the same level, measured half an inch more than the left. Cough was noted to be worse and expectoration more free when patient was lying on his back. On the right side, behind, there was dulness from the spine of the scapula to the base, which dulness extended into the axilla as far as the anterior axillary line and as high as the level of the nipple. Changes in posture did not alter the line of dulness. Over this area there were weak breathing, absence of vocal fremitus, and diminished vocal resonance, which was nasal near the angle of the scapula. On the left side, behind, from the spine of the scapula down, there were friction sounds both in inspiration and expiration. Nowhere could be made out any moist râles, while a few dry râles were heard in front on both sides. The liver dulness, vertically, in the right mamillary line extended from the 6th rib to one inch below the costal margin.

The patient was given good diet and an expectorant mixture. On the 16th June the right side of chest was aspirated below the angle of the scapula and 10 ounces of thick pus withdrawn before the needle became blocked. Both this pus and the sputum were examined microscopically for tubercle bacilli, as there was a family history of phthisis, but none were found. After the aspiration the expectoration diminished to about 10 ounces daily. The general condition improved at first; he ate and slept better; but the improvement soon became stationary, and he was transferred, eighteen days after admission, to the surgical wards, under Dr. Shepherd, who, three days later, resected a portion of the 9th rib, below the inferior angle of the scapula, opened

the pleura and evacuated about a quart of thick stinking pus. The expectoration at once lessened, and three days afterwards amounted to only a couple of ounces in twenty-four hours. The general condition of the patient at this time was slightly better and the cough much decreased in frequency. The liver had slightly diminished in size, its dulness vertically, in right mamillary line, extending from 6th rib to half an inch below margin of the ribs. The discharge from the opened pleural cavity is moderate.

Oct. 16*th.*—Patient left the hospital to-day, to return weekly to have his side dressed. There is still a large fistulous opening in right side, behind, discharging a moderate quantity of pus. He has not gained strength very fast, as he is still far from being in a good state of nutrition, but he is much stronger than at the time of the operation. There is dulness in lower half of right side of chest, behind, extending around into axillary area and covering about the same area as before the operation. Breath sounds are weak over this area, and there is depression of the intercostal spaces on inspiration in the neighbourhood of the wound. No moist sounds in dull area. At right apex there is slight prolongation of expiration, and behind an occasional crepitation. Down the back, on the left side, there is absence of the friction previously described. There is exceedingly little expectoration, not half an ounce per day, and that principally mucus. Pus from the wound and the sputum were examined for tubercle bacilli, but none found. Liver dulness appears normal in extent, coming only to edge of ribs. Air enters lungs apparently to edges of wound.

Remarks. — There are some interesting points connected with this history. 1. It is plain that a double purulent pleurisy existed, the left side being first attacked, and that spontaneous cure occurred. I see no other way of explaining the history of pain in the side, followed after a considerable period by the sudden expectoration of a large quantity of pus. In addition, we found evidence of old pleurisy in the left lung, in the presence of friction sounds. 2. The expectoration of large quantities of almost pure pus while under our observation in hospital. Although

many have attempted, no one has succeeded in explaining satisfactorily this frequently observed occurrence, the passage of pus from the pleural cavity to the external air without the existence of a bronchial fistula. No doubt it is an attempt at a cure on the part of nature, and in the case of the left lung she seems to have succeeded. The diminution in the quantity of pus expectorated after the aspiration is noteworthy, but it has been observed long ago. In this case the temperature was remarkably low, and fell after the expectoration became copious, so that I felt inclined to await events and not advise surgical interference. The man seemed very weak, however, and having the means of relieving him at hand, it seemed cruel to delay. The effect of the operation in reducing the quantity of pus expectorated was very remarkable In these days of early removal of pus by thoracotomy we do not often see the remote results of empyema as they were observed by a former generation. Perforations of the chest wall, bronchial fistulæ, and pulsating pleurisy have become very rare.* 3. The diminution in the size of the liver as the dyspnœa was relieved. The liver was noted on admission as extending from the 6th rib to a point 1 inch below the costal margin in the right mammary line. On his discharge, the limits of hepatic dulness were normal. Enlargement of the liver in empyema was noted some forty years ago by my late father in a paper in which this very subject of copious purulent effusion was dealt with. It would seem that in this case there was a real hepatic enlargement and not a displacement, inasmuch as the upper limit of the hepatic dulness remained stationary throughout.

Cases under the care of Dr. Roddick.

(Reported by Dr. W. E. Inksetter.)

Case I.—*Tubercular knee joint; Extensive necrosis of lower end of femur; Amputation; Recovery.*

C. E., æt. 15, admitted February 8th, 1890, complaining of

* *Vide MacDonnell, Robert Lea*—On Contributions to the Diagnosis of Empyema. Dublin Journal of the Medical Sciences, March, 1844.

Traube, Ges: Abhandlungen, vol. iii, p. 44, 1872.

Osler. Canada Medical and Surgical Journal, vol. xi, p. 744.

general weakness, swelling, pain and fixation of the right knee, with several running sores about the joint.

Patient was always a delicate boy. When three years of age he had what was called an attack of "rheumatic fever" which was confined entirely to the right knee. This, which was in all probability a tibial abscess forming, was followed by disease of the tibia which lasted about eighteen months, during which time several pieces of bone escaped through openings in the leg. When five years of age, the left leg above the ankle became swollen and tender (no doubt another bone abscess). This was lanced, and finally a sequestrum was discharged.

At seven years of age abscesses formed over the great trochanter of the left femur and the right shoulder. These were allowed to rupture spontaneously, and healed without discharging any bone. Had a similar abcess on back a year and a half ago. Right knee was swollen and its motions limited ever since the attack of so-called rheumatism; and the flexion and fixation gradually increased, the pain being more acute at varying intervals. Three months before admission he had a feverish attack with gastric symptoms. At the same time the knee became very painful and swollen, and a sinus formed in the popliteal space, which discharged a large quantity of pus. A few days later two sinuses formed on the inside of the knee, which also discharged considerably.

On admission, patient was greatly emaciated; skin dry and harsh; temperature irregularly elevated. Diminished resonance with increased vocal fremitus over right pulmonary apex. The right knee was flexed at about a right angle, and a uniformly dense enlargement extended from three inches below the joint to about the same distance above it. The joint allowed free lateral and antero-posterior movements accompanied by grating sounds, shewing complete disorganization. A sinus in the popliteal space led down to necrosed bone. Owing to the extent of disease and the wretched general condition of the patient, excision was considered out of the question; amputation was therefore decided upon.

Feb. 13*th.*—Patient etherized and thigh amputated with anti-

septic precautions about six inches above the knee, by an anterior skin flap and posterior transfixion flap. A large rubber drain was introduced at the outer angle of the wound, and the stump dressed with Lister's double cyanide gauze.

On examination of the amputated limb, an abcess was found extending from the joint nearly up to the point of amputation. The joint surfaces were completely eroded and the bone found very soft and brittle. The temperature became normal on the morning after operation, and remained so throughout.

Feb. 18*th.*—General condition markedly improved, appetite hearty, no pain in stump.

Feb. 22*nd.*—Stump dressed for the first time; the wound found remarkably healthy; sutures and drains removed.

From this time out the progress was uninterrupted and he gained flesh rapidly. He was discharged Nov. 6th, 1890, with the stump entirely healed; stouter and in better health than he had been for years previous.

CASE II.—*Perineal abcess; Sloughing of urethral wall; Subsequent urethrotomy; Recovery.*

J. H., aged 32, waiter, admitted Sept. 8th, 1890, complaining of weakness, pain and swelling in perineum, frequency of micturition, considerable constitutional disturbance. Had chancroids in 1880, and gonorrhœa two years later. Until about six months ago he drank freely. About a month before admission he first noticed difficulty and frequency of micturition. About a week previous to admission these symptoms became greatly exaggerated and a silver catheter was passed occasionally by his physician. The use of this instrument caused great pain, and the swelling appeared in the perineum shortly after its first passage. On admission there was a fluctuating tumour, about the size of a man's fist, situated along the scrotal and perineal portion of the urethra; penis and scrotum very œdematous; alkaline urine voided in drops every few minutes and contained a large quantity of pus; patient pale and exhausted; temperature 103°.

Sept. 9*th.*—Patient etherized; a sound was passed down the

urethra into the tumor, but could not be made to reach the bladder; considerable narrowing of entire penile urethra. Tumor incised freely in middle line of perineum, and exit given to about four ounces of thin fœtid pus. All attempts to find the deep urethra and thus enter the bladder having failed, a large rubber drainage tube was introduced into the abscess cavity and held *in situ* by an ordinary safety pin passed through the edge of the wound. Iodoform and a pad of sublimated gauze constituted the dressing, the wound being first thoroughly irrigated with sublimate solution (1-2000). The temperature fell to normal immediately after the operation and so remained.

At first the urine was all passed through the perineal wound; but as this gradually healed, it began slowly to flow forwards. The tube was removed on the sixth day. At the end of four weeks the perineum was healed, but a strictured condition remained. Patient was again etherized, and after some difficulty a whalebone guide was passed into the bladder, and the urethra freely scored with Guion's urethrotome. Sounds were then passed freely up to No. 16 English scale. At present the patient is well, and large sounds can be passed without difficulty.

CASE III—*Congenital syphilis; Periostitis appearing for the first time in the fourteenth year.*

A. C., æt. 16, admitted to hospital Sept. 18th, 1890, complaining of a painful swelling on the front of right leg; no history of injury or of acquired syphilis.

In 1887 a small hard growth appeared in the site of the present enlargement. This disappeared under the influence of rest and a few applications of iodine. About a year later, 1888, the swelling again appeared and has gradually increased in size, varied treatment having no effect. On admission the front of the tibia had a bowed appearance from a dense tumor occupying half the length of the bone with its greatest prominence about the middle of the leg. The skin over it was inflamed and looked as if about to suppurate; very tender and painful.

Patient is an only child; parents living and healthy. His physiognomy was, however, somewhat striking; face long;

bridge of nose rather flat; eyes small and weak; incisor teeth, both upper and lower, slightly notched, and the arch of hard palate very high, giving the voice a nasal tone.

Syphilitic periostitis (congenital) being diagnosed, the patient was put upon large doses of the potasium iodide, twenty grains thrice daily, to be gradually increased. The pain and swelling rapidly diminished until at the expiration of ten days the former had completely disappeared, and nothing remained but the thickened condition of the tibia, the result of the old osteitis.

Reviews and Notices of Books.

A Manual of Modern Surgery for the Use of Students and Practitioners. By JOHN B. ROBERTS, A.M., M.D. With five hundred illustrations. Philadelphia: Lea Brothers & Co. 1890.

Dr. Roberts has succeeded in writing a very practical book, giving especially the operative methods of the best surgeons of the day, and discussing briefly the most modern but well-established facts of surgical science. The illustrations are, on the whole, good and well selected from standard works, while not a few are quite original. The chapter upon "Diseases and Injuries of the Nervous Centres and Nerves" is one of the best in the book, the diagrams here being especially good. The affections of the abdomen and pelvis are likewise very thoroughly discussed.

In our opinion the work is more suited to the busy general practitioner than the student, being a book of ready reference rather than a text-book. We therefore commend it highly to the general profession.

Transactions of the American Surgical Association. Volume the Eighth. Edited by J. EWING MEARS, M.D., Recorder of the Association. Philadelphia: P. Blakiston, Son & Co. 1890.

This volume is rather less bulky than many of its predecessors, although a glance at the contents shows that any decrease

in the quantity of material offered is amply counterbalanced by the quality. It is impossible here even to name the titles of the several papers (there being twenty in all), although we have read many of them with great interest. Dr. William Bull of New York, in an exhaustive paper on the "Radical Cure of Hernia," offers some interesting conclusions on that much debated subject, namely, the best method of operating. He says: "My own results are no better by the complicated method of suture of the ring only, or of the ring and canal, than by the simpler method of excision of the sac after ligature." Speaking of relapses he makes the remarkable statement that between the months of January and October, 1889, forty-five relapsed cases applied for trusses at the Hospital for Ruptured and Crippled, and that in the past nine months there have been as many more. He concludes his article by stating that "all methods of radical cure will be found unsatisfactory." There are also papers by Conner, Morton, Keen, Bradford, and others of note in their special departments of surgery. These transactions should be in the hands of every surgeon.

Society Proceedings.

MEDICO-CHIRURGICAL SOCIETY OF MONTREAL.

Stated Meeting, 3rd Oct., 1890.

G. E. Armstrong, M.D., President, in the Chair.

A Case of Hodgkin's Disease.—Dr. R L. Macdonnell exhibited a male patient aged 25, a freight checker, the subject of Hodgkin's disease. Up to four years ago the patient had enjoyed good health, but about that time he suffered from a severe and prolonged attack of what was called "bronchitis." There were severe attacks of dyspnœa, which came on exertion as well as when he was at rest, and cough was very severe and brassy. He made a good recovery and continued well until two years ago, when he began to notice the presence of lumps in his neck. These have gradually increased in size. Two months ago the breathing became seriously embarrassed, and suffocative attacks of the most severe kind occurred, especially when in a recumbent position. In the beginning of August he presented himself at the Montreal General Hospital, suffering from attacks of dyspnœa and from a bad brassy cough. On Aug. 11th a chain of glands was removed from the front of the trachea. These were found to extend very deeply into the chest, and were continuous with other glands in the mediastinum. He made a good recovery from the surgical operation and since then has not suffered from attacks of dyspnœa, though his breath is short on exertion, and he still suffers from cough. When a boy he remembers that frequently there were large painful lumps in the armpits. Epistaxis has been frequent during the last six months. No history of any venereal disease. The glands in the left side of the neck are enlarged, prominent; distinct from each other; loosely attached; of firm structure. There are two or three enlarged glands in each axilla, but none in groin. The spleen is enlarged but cannot be felt below ribs. The liver is of normal size. Examination of the urine yields negative result. The skin generally is clammy, but always on the left side of the forehead and face there is very free perspi-

ration. The left pupil is much larger than the right. Examination of the heart and lungs negative. Temperature, in afternoon, has generally been 1° or 1½° above normal. Pulse is always between 100 and 110. No member of his family has suffered from enlarged glands. Examination of blood reveals a large excess of white cells. But one count has been made. For the last month Fowler's solution has been taken regularly with apparent good result. About a fortnight ago, the patient experienced a sudden seizure which he described as follows:— He was lying upon a sofa when he felt as if some fluid were running up in his throat; he coughed, and immediately becoming insensible fell over on the floor, injuring his head in the fall. He was said to have remained unconscious for a few minutes.

Dr. Mills thought that the case was one that if it did not teach some lessons in human physiology, at least, confirmed the conclusions derived from an experimental study of the lower animals. Believing, as he did himself, that the whole of the metabolism (nutrition) of the body was directed by the nervous system, he was led to ask, Was the disease of the glands owing to primary disease of the nervous system, or were the symptoms referrable to the iris, the sweat glands and the heart, the consequence of irritation of the sympathetic nerves supplying these parts? It was possible to explain them all in the latter way. It had long been known that stimulation experimentally of the cervical sympathetic led to dilation of the pupil and facial sweating. More recently it had been shown, by himself and others, that in all the animals thus far examined the accelerator nerves of the heart were derived from the sympathetic and were given off either from the first thoracic ganglia or from the inferior or middle cervical. In man it was likely that the most important branches were derived from the middle cervical ganglion. Sympathetic fibres ran also in the vagus stem itself. It was possible to understand the cardiac acceleration from an irritation of these fibres, and this was in harmony with the sweating and dilation of the pupil. The syncope referred to might arise from inhibition by the inhibitory fibres proper in the vagus or from exhaustion consequent on the undue action

of the sympathetic, and the latter seemed in the present instance the more likely. The case had proved very instructive to himself physiologically.

Dr. Birkett said : I examined this patient for the first time on 6th June last, who then complained of hoarseness which had been present for the last two weeks ; there was also considerable dyspnœa. Laryngoscopic examination proved the presence of a small superficial ulcer situated on the middle third of either vocal cord, and directly opposed to each other. The base of each ulcer was pale, and the surrounding tissues slightly hyperæmic. The pharynx was decidedly anæmic. The lymphatic glands in the neck were found to be enlarged, especially those about the sterno-mastoid muscle ; the three lobes of the thyroid were also found to be enlarged. Thinking that this was a case of tuberculosis with laryngeal manifestations, I proceeded to examine the lungs, but a careful examination failed to discover any lesion in this region. The temperature was slightly elevated (100°) and the pulse 96. This, in conjunction with the foregoing laryngeal condition, led me to regard the case as one of localized tuberculosis, due, probably, to a caseating degeneration going on in the enlarged glands of the neck ; but to have more satisfactory proof, Dr. Johnston kindly examined the sputum and reported the absence of either tubercle or elastic tissue. Upon this evidence I regarded the laryngeal condition as one of chronic laryngitis, in which superficial ulceration had taken place. Before I received the report from Dr. Johnston, I treated the case as one of tuberculosis, and used lactic acid of varying strengths, namely, 20% to 80%, with the result that the ulcers healed within two weeks. At this time I thought I had cured a case of tuberculosis of the larynx, but the result of the examination of the sputum put this idea to one side, and I regarded it in the light previously expressed, that it was a case of ulcer of the vocal cords occurring in the course of a chronic laryngitis. About the 1st of August the dyspnœa began to increase, and laryngoscopic examination showed that there was pressure on the anterior wall of the trachea due, undoubtedly, to an enlarged gland situated on the middle lobe of the thyroid. As the dys-

pnœa continued to increase I advised surgical interference, which was undertaken by Dr. Shepherd and followed by considerable relief to the distressing symptoms.

After the members of the Society had fully examined the patient, Dr. MacDonnell stated that the diagnosis was not doubtful. The history of indolent enlargement of gland, extending along the course of the great vessels and following the route just as described by Hodgkin, involving first the cervical and then travelling downward, together with the altered composition of the blood, and the enlargement of the spleen, combined to complete the clinical picture. But the most interesting point in the case was the interference with the cervical sympathetic, as was shown by the dilated pupil, the unilateral sweating of the face, and the accelerated pulse. Interference with cardiac innervation probably accounted for the attack of syncope.

Fragilitas Ossium.—This patient was exhibited by Dr. Roddick, who said that the boy, aged 13 years, had received a fracture of the right thigh when one year old, and when three years old, Dr. Roddick had set a second fracture of the same thigh. Up to the present time the boy had had no less than twenty-seven fractures of the lower extremities, the left thigh being at present ununited. He purposed at a near date amputating both limbs, as they are, in their present condition, quite useless.

Dr. Hutchinson, who had frequently attended this patient, verified the statement that there is entire absence of pain in the setting of these fractures.

Dr. Mills thought the case illustrated the continuation of a sort of embryonic condition of the bones after birth; want of proper development of osseous tissue rather than lack of growth, or atrophy from disease; though, of course, this was to be taken into account also. The bones of the upper extremities, trunk, and especially of the head, were not defective. An analagous, though less marked, defect was often seen in certain of the larger breeds of dogs, such as St. Bernards, mastiffs and great Danes, which were now being bred of enormous proportions. The quantity of bone produced seemed often to be out of proportion to the qnality, hence imperfect osseous development in puppyhood and

often deformities of a permanent character in consequence, especially in the hind limbs. The head was very large in these dogs.

Dr. Shepherd thought that the atrophy or brittleness of the bones were due to disuse, and cited a case of a patient who, confined to bed for a very lengthened period, fractured one thigh from a slight injury.

Dr. Smith thought that such conditions were brought about entirely through imperfect dieting.

Dr. Johnston asked Dr. Roddick if there were goitre present in any of the members of the family, as this form of bone affection is extremely common in Switzerland, where goitre is also frequently met with.

Dr. Roddick in reply said that no such condition was present in any member of the family.

Genu valgum and genu varum.—Dr. J. Bell exhibited photographs of these cases before operation, and the patients themselves, showing the brilliant result of operative measures. The ages of the patients are respectively three and five years.

Dr. Johnston exhibited, for Dr. W. Gardner, two specimens —(1) *interstitial myoma of uterus*, (2) *myo-sarcoma of uterus*. The first concerned a patient thirty-five years old, whom he had examined years ago and advised the removal of the appendages. The tumour was a very large one and very closely adherent to surrounding structures from which it was extremely difficult to separate without a great deal of hemorrhage. In the second case, the age of the patient was forty-two years; the tumour had grown rapidly and was removed without difficulty.

Dr. Alloway remarked that the interesting feature in the second case was the condition of the umbilicus; this was distended, and protruding one inch above the level of the skin. Such a state is only found when fluid is contained within the abdomen.

Fibro-cystic of Ovary.—Dr. Johnston exhibited this specimen for Dr. Shepherd. In this case the tumour was found to be freely moveable, hard and painful; the pelvis blocked with an immoveable mass. The tumour was found covered by in-

testines or very intimately adherent to adjacent structures. The recovery of the patient was uninterrupted. Dr. Johnston reported that the nature of the tumour was fibro-cystic, although the macroscopic appearance was like that of a papilloma.

Tuberculosis of the heart.—Exhibited by Dr. Johnston. This specimen was from a child who had died of general tuberculosis. The heart had become attacked, as evidenced by a small tubercular nodule in one of aortic valves; tubercular endocarditis is a condition rarely met with.

Case of sudden death.—Dr. M. McGannon of Brockville briefly related a case of a young girl who for about a week had complained of feeling poorly, dizzy, and at times suffering from headache. The abdomen was slightly distended and without pain; temperature 102°; slight delirium. Was suddenly called one morning as the patient grew worse, and before reaching the house she had died. Unfortunately no post-mortem examination was allowed.

Dr. MacDonnell remarked that sudden death in typhoid he had seen once and regarded it as unusual; syncopal attacks, however, were common. It might possibly have been a case of tubercular meningitis with irregular symptoms.

Dr. Mills thought that the condition of the heart in typhoid was often overlooked, and thought that cases of sudden death in such were due to fatty degeneration of that organ.

Dr. F. W. Campbell said that Fagge attributes the suddenness of death as due to paralysis of the medulla.

Selections.

In Memoriam.—James Matthews Duncan, M.D., F.R.S., etc.—This great obstetrician died at Baden-Baden on September 1st. His fame was so widespread, his work so valuable, and his individuality so marked, that a short review of his professional career and opinions will doubless prove of interest to our readers. His personal character, his manly bluntness harmoniously blended with wit and geniality, and other equally admirable qualities, earned for him profound love and esteem amongst his relatives and pupils. His memory requires no vulgar and tedious panegyric, nor need we dwell on the numerous academic honors which were showered upon him from an early stage of his career. They were the result of the fame reaped from his labors, and it is with those labors that we have to deal.

Dr. Matthews Duncan was born in April, 1826, in the city of Aberdeen, where his father was engaged in mercantile pursuits. Educated in his native city, he early displayed scientific instincts. His professional studies were carried on in Edinburgh and Paris; in 1846 he took the degree of Doctor of Medicine at Marischal College, Aberdeen. Paris, in those days, afforded the industrious student unusual opportunities for studying pathology. The mortality was high, the facilities for obtaining necropsies were great, and the system of medical education did not force study on the unwilling, at the expense, perhaps, of the able and industrious. Young Duncan eagerly sought every case of death after pregnancy or after labor, in times when obstetrical pathology would hardly be said to exist. He thoroughly examined the pelvic viscera, connective tissue, and peritoneum in these victims of the relative ignorance which then prevailed. Thus was founded his fame as a scientific authority in obstetrics and gynecology. Thanks to him and to certain excellent French tutors and fellow-students who were associated with him in his labors, humanity gained invaluable knowledge of the treatment and prevention of diseases of the puerperium.

Attracted by his merits, Sir James Simpson engaged Dr. Duncan as his private assistant. The history of the introduction of anesthesia is familiar to every American. Our readers are, therefore, doubtless aware that, when Simpson began his experiment on chloroform, Dr. Duncan was the first person who submitted to be placed under the influence of that compound.

Dr. Duncan at this period commenced private practice in Edinburgh. He was appointed physician to several institutions, and in 1853 he began a course of lectures on midwifery at the Extra-Mural School which rapidly established his reputation as a teacher.

When thus settled in Edinburgh he soon attracted the attention and excited the admiration of the profession by the valuable contributions which he made to science and to medical literature. A fair review of all his work, would fill a whole number of this JOURNAL, but some notice must be taken of his best known theories and doctrines. The first of his writings appeared in April, 1853, in the *Monthly Journal of Medical Science*, and was entitled "The Theory of Menstruation in Early Pregnancy, Superfetation, and the Site of Insertion of the Ovum." He brought forward anatomical proof of the possibility of menstrual fluid being naturally or easily derived from the lining membrane of the cavity of the uterus, up till the end, at least of the second month. The mucous plug which sealed up the os uteri might easily become displaced. In 1855 appeared "The Statics of Pregnancy." This work contained certain deep researches into the natural philosophy of gestation. The section on the position of the fetus was a fine specimen of sound scientific work. With regard to the uterus, he held that, both in the horizontal and in the erect position of the woman, the pregnant uterus was in an oblique position. By this arrangement the uterus was preserved in a uniform condition free from many statical variations which might otherwise affect it suddenly and injuriously. Dr. Duncan also created a sensation in the anatomical and obstetrical world by the theories expressed in his "Pelvis studied with a View to Obstetrics." In this paper he demonstrated that the sacrum was not a wedge, nor was it the

keystone of the so-called "pelvic-arch." It was a strong transverse beam, curved on its anterior surface, its two ends, the auricular surfaces, coming into contact with the corresponding parts of the iliac bones. From its position it could not, in Dr. Duncan's opinion, act as a wedge. In a series of "Papers on the Female Perineum" Dr. Duncan insisted that at first labors an inevitable posterior laceration of the vaginal orifice took place. He favored the practice of supporting the perineum in labor. He considered that laceration of the perineum was not, in any strict sense, a cause of prolapse or procidentia. It favored complete descent of the uterus, so that restoration of the perineum was useful to resist the progress of the descending uterus, but the operation did not remove the cause of displacement. In 1869 appeared a work which was perhaps the most characteristic production of his mind and pen. This was the famous "Practical Treatise on Perimetritis and Parametritis." We all know how he drew sharp pathological and diagnostic distinctions between the two diseases. His conclusions remain contested to the present day—indeed, his theories on gynecology were never so widely accepted as were his doctrines on pregnancy and labour. The work, however, won the admiration of its readers on account of the extreme clearness with which the author expressed his propositions and conclusions. It was the forerunner of his "Lectures on the Diseases of Women," compiled throughout in the same scientific and literary style. The most remarkable, though not the most characteristic, of Dr. Duncan's works was his "Fecundity, Fertility, and Sterility," which first appeared in 1866, and formed the basis of his Galstonian Lectures "On Sterility in Women," delivered in the Royal College of Physicians in 1883. This valuable publication was the fruit of very subtle researches into questions of age, sexual temperament, and other factors in relation to barrenness and the reverse condition. In 1870 Dr. Duncan brought out an essay "On the Mortality of Childbed and Maternity Hospitals."

In 1870 Sir James Simpson died, and a contest took place for the vacant chair of midwifery in the University of Edinburgh.

Dr. Duncan, Dr. Keiller, and Dr. A. R. Simpson, were candidates, and the opinion of the profession was strongly in favor of Dr. Duncan, but Dr. Simpson was the successful candidate. This election caused a great deal of stir at the time, and there can be little doubt that Dr. Duncan's disappointment was intense; nevertheless he continued to work for seven years longer in Edinburgh with unabated energy.

The British Empire is controlled by a race whose instincts are essentially averse to extreme centralization; nevertheless British talent nearly always gravitates to London. Dr. Matthews Duncan was drawn to the metropolis through the fame of his reputation as a teacher, and also through his own inclination, for London was a new field for the indulgence of his favorite resource—the education of pupils. Dr. Greenhalgh retiring in 1877, Dr. Duncan was appointed in his stead Physician-Accoucheur and Lecturer on Midwifery to St. Bartholomew's Hospital, an institution with which is associated the largest medical school in London. The peculiar system which prevails alone in the British capital is open to certain objections, but it greatly favors voluntary enterprise and individual action. Dr. Duncan took full advantage of his liberty. Not only did he teach in the wards with great energy, but, holding that the regulation course of systematic lectures on midwifery was insufficient, he increased their number, delivering a lecture on every week day in the summer session. In winter he gave a clinical lecture once a fortnight—the foundation of his famous "Lectures on the Diseases of Women," a work which has passed through several editions. His discourses proved highly popular and drew large audiences, partly composed of qualified men. His pupils soon began to distinguish themselves before boards of examiners, but the still greater good which he effected by instilling high principles of professional morality into the minds of his disciples was incalculable. Of his attitude in respect to operative gynecology more will be said presently, as it needs special consideration.

During his residence in London, which lasted from September, 1877, till his death, Dr. Duncan's private practice became

large and fashionable. He attended H.R.H. the Duchess of Albany in her confinement. Notwithstanding his practice and his hospital duties, he found time to get through plenty of scientific work. He was an almost constant attendant at the meetings of the Obstetrical Society of London, of which he was president in 1881, and contributed yearly one or more memoirs. They mostly related to the physics of labour, and have appeared in abstract in this JOURNAL. Perhaps the most important were the exhaustive monographs on "Lupus of the Female Generative Organs." The author caused a fine series of water colors to be prepared, taken from life; they illustrated the appearances of several varieties of disease which he classed together as "lupus." These drawings were presented to the museum of the Royal College of Surgeons of England.

Dr. Matthews Duncan's health became greatly impaired during the early part of last spring. He suffered from gouty eczema and attacks of angina. He lectured on obstetrics as usual and with undiminished energy till the middle of June. Early in that month he spoke for the last time at the Obstetrical Society. At the end of June, however, he broke down completely and gave up all hospital work. A month later he went to Blankenberghe, a seaside resort in Belgium, where he enjoyed the company of Sir William Turner. His health improved and he bathed in the sea. Early in August he went on with his family to Baden-Baden. For long he believed that his symptoms were neurasthenic; but his father had died of heart disease, and now unmistakable signs of cardiac mischief set in. On August 17th, 18th, and 19th violent attacks of angina occurred, and edema of the lungs, albuminuria, and anasarca developed. Under the care of Dr. Gilbert, of Baden-Baden, and Dr. Aldren Turner he improved, the pulmonary and renal symptoms subsided after cupping, and it was decided to remove him to London on September 2nd. At 5 o'clock on September 1st, however, he died suddenly when lying in bed comfortably supported by pillows.

The funeral took place on September 8th. The first part of the ceremony was held at St. Mark's Church, North Audley Street,

London, near the residence of the deceased in Brook Street. The clergyman who officiated was the Rev. R. Borrodale Savory, rector of St. Bartholomew's the Greater, and son of the eminent surgeon. Notwithstanding the time of the year—for London doctors take their annual holiday about this season—the church was crowded with members of the profession, including Sir William Savroy, Sir Spencer Wells, Sir Crichton Browne, Dr. Quain, who represented the Queen, a large portion of Dr. Duncan's colleagues from St. Bartholomew's Hospital, and more than half the senior and junior obstetric physicians from the eleven medical schools in the British metropolis. There were besides a large number of old pupils, English, Scotch, and Irish, and many doctors unassociated in any way with the deceased. The interment took place at a cemetery at East Finchley, to the north of London. The day was warm and bright.

Dr. Matthews Duncan died just upon the eve of his retirement from his hospital and teaching appointment. The instruction of his class was to him not so much a labor of love as an intense pleasure, and he certainly did not look forward to retirement with enthusiasm. The loss which his family and the profession have sustained is indeed irreparable. To his wife and children he was devotedly attached, and all must sympathize with them in their bereavment, sustained at a time when they were looking forward to days which he might have spent more freely in their company than during the period of his arduous though congenial academic duties. The profession, too, will sorely grudge the loss of many spare hours which he assuredly would have utilized for their benefit. As the writer of these lines can testify, no member of the profession, particularly of that branch with which this JOURNAL is concerned, could fail to be the better for the amount of medical knowledge, medical lore, and medical ethics which flowed from Dr. Matthews Duncan's lips in the course of an hour or two spent in his company.

Dr. Matthews Duncan will best be remembered as a teacher in the widest sense of the word, an educator of unqualified youths, and an instructor of his profession. Many men on the staff of medical schools have, of their own accord, devoted much more

time to clinical teaching than was demanded by the regulations of the curriculum. Few, very few, however, have ever gone so far as Dr. Duncan, and of their own free will increased the number of systematic as well as clinical lectures required by the terms of their professorship. The natural result of his disinterested industry was the intense reverence with which his name was and is held by his pupils. None of us can fail to admire the energy with which he continued his self-imposed professional work and severe physical exhaustion due to failing health.

Science must, we believe, most commend Dr. Matthews Duncan as an obstetrician. His skill in the lying-in chamber was well known. He was second to none of his compeers in doing all that is possible to maintain obstetrics as a science and at the same time as a profession suited for men of culture, refinement, and education. He thoroughly investigated the physics of pregnancy and labor. His contributions to literature on the subject of the position of the fetus are amongst the best evidences of his correct method of research. He experimented on the normal fetus out of the uterus, placing it in fluids of the same specific gravity as the liquor amnii, and found that it floated in such fluids in the same position as it naturally assumed in the uterus. When the fetus became decomposed it floated in a different manner, just as, under the same circumstances, it tended to lie in a different position in the uterine cavity. Thus Dr. Duncan trusted to direct experiment, instead of beginning by an assumption that a vital force in the uterine walls or some mechanical arrangement in the bony pelvis forced the fetus into the right position, and then setting to work to prove the assumption.

Dr. Matthews Duncan held that the obstetrician should devote himself to the treatment of pregnancy, labor, and the puerperium, undertaking at the same time the management of diseases of non-pregnant women as far as therapeutic aid would avail. He distrusted the practice of abdominal sections by obstetricians. "Nobody can be a Sir Charles Locock and a Sir Spencer Wells at the same time," he would say; and he acted up to his convictions, although his most distinguished pupils have not all

followed his example. This matter leads to another subject—Dr. Duncan's powers and opinions as a gynecologist. Most assuredly the profession in general never held him to be so recognized an authority in diseases of women as in obstetrics. He was none the less one of the soundest of pathologists and the best of clinical observers. His saying above quoted will clear away a great deal of misunderstanding; being a practical obstetrician, his bent was toward obstetrics. He never attempted "major" gynecology. As to practical "minor" gynecology, he cannot be blamed for treating it with distrust when we bear in mind what the term implied in the days of his youth. We cannot be surprised if he occasionally overlooked what might be good when he had to deal with so much that was bad. It was inevitable that his training and surroundings must lead him to condemn operations which other good men practised on grounds which they deemed perfectly justifiable. This explains his aversion to trachelorrhaphy. Again, Dr. Duncan's peculiar views on gynecological ethics were the results of his instincts as a teacher. He considered that the student must first learn the nature of the parts with which he has to deal, and then acquire the art of detecting the diseases with which those parts are affected. This was his education, and when thus educated, and not till then, he could see an operation performed with profit; not till then was he competent to judge whether the operation was justifiable. Dr. Duncan strongly objected to a system which teaches the bare steps of major operations and justifies them on the score that a few experts can claim successful results. The student, however, is ever eager to see and hear of big surgery, and we all know the teacher must cool such pernicious ardor and show him that he has many things to learn before he can profitably study and practise operations. Dr. Duncan constantly acted as the good teacher in this respect. The consequence was that many of his remarks which were meant for the classroom were sometimes taken as unjustifiable criticisms on operators of high experience. His real views on ovariotomy and allied operations may be better judged by the admiration which he often expressed for the work of his friend Dr. Keith.

We must not harbor the impression that Dr. Matthews Duncan distrusted ovariotomists to the last because his system discouraged any ill-advised efforts to manufacture Wellses and Keiths. —*American Journal of Obstetrics.*

A Case of Retro-Peritoneal Hemorrhage. (By Dr. James McLeod, of Charlottetown.)—Mrs. ——, aged 52, a woman of splendid physique and healthy appearance, consulted me on July 17th, 1890, for pain in the epigastrium, which had persisted for a day or two. Her previous health had been almost invariably good, and she declared that she had never felt better than for the last five or six months. Early in the same month she complained of pain in the region of the right ovary, but which was accompanied by no constitutional disturbance whatsoever. This pain, I may say in passing, disappeared upon the onset of the epigastric distress. On the morning of the 18th I found her suffering from great pain in the epigastrium, aggravated by toast and tea which she had taken for breakfast, but which she soon rejected. There was no constitutional disturbance; tongue clean, pulse and temperature normal, inspection and palpation giving a negative result. At noon I saw her again. Pain still increasing; no medicine or food taken, as she dreaded a return of the suffering caused by the ingestion of food in the morning. I ordered morphia, and to be repeated as required. I was soon again sent for and found her in extreme collapse, extremities cold, face ashen, pulse slow and feeble, and temperature subnormal; and so intolerable was the pain that the patient declared it would kill her if not relieved. With the application of hot bottles and the administration of morphia hypodermically, and brandy and beef peptonoid per rectum, the patient slowly rallied, and two hours later the countenance assumed its natural expression, the pulse rose to 60, full and regular, and she expressed herself as feeling comfortable. On the morning of the 19th I found the patient weaker, pulse 80, but she had been disturbed once or twice apparently from the rectal alimentation. She still absolutely refused all food and drink by the mouth. The lower part of abdomen was free from

any pain, palpation and deep pressure being well tolerated. Later on, finding no improvement, I proposed a consultation. At 3 P.M. held a consultation with Dr. Richard Johnson. The patient then complained of a bearing-down pain in rectum and uterus, and pain was elicited on pressure over lower part of abdomen also. Upon making a vaginal examination I found the uterus fixed and tender to the touch. The symptoms rapidly become more severe ; vomiting set in, first bilious in character, then duodenal, then dark coffee-ground, the pulse meanwhile becoming more and more rapid and feeble. Death ensued at one o'clock on the morning of the 20th, immediately after the patient had vomited a large quantity of dark fluid blood. A hasty post-mortem two hours later revealed the following : Abdominal adipose tissue about two inches thick ; omental fat fully one inch thick ; stomach, liver and spleen normal ; no peritonitis. Upon raising stomach and liver the retro-peritoneum was found dark-red and remarkably bulging forward, but not perforated. One gland behind the stomach was found indurated, and felt and cut like scirrhus. Upon penetrating the retro-peritoneum, hemorrhage was found to have taken place in and around the pancreas and extending into the retro-peritoneal tissue down to the pelvis. The indurated gland, which was not, unfortunately, preserved, if cancerous, would appear to point to a primary cancer of the pancreas as the exciting cause of the profuse and fatal hemorrhage ; but, on the other hand, the absence of a knotty, uneven swelling or of small tumors in the organ, and also the absence of any of the diagnostic symptoms of primary cancer as described in *Ziemssen* and the *Annual of the Universal Medical Sciences*, 1889, such as digestive troubles, cachexia, emaciation, progressive liver disease, vomiting, jaundice, dropsy, etc., would seem to exclude the hypothesis of cancer in this case. In the *British Medical Journal*, Sept. 1888, is recorded a case " the chief features of interest of which were the great accumulation of fat, etc.", " but here also the patient was anæmic and slightly jaundiced, etc." This present case would seem to be of a kind with the four cases reported by Klebs and Zenker, and described in *Ziemssen*, vol. viii, pp. 622, 623, all of whom were corpulent,

and Friedreich adds "that fatty degeneration of gland cells are always found along with general obesity—or, in other words, a hæmorrhagic pancreaticus, which, according to Shattuck (*Annual of the Universal Medical Sciences*,, 1890), proves fatal in from two to four days.—*Maritime Medical News.*

Palpable Kidneys —KUTTNER (*Berl. Klin. Woch.*) has four papers on "palpable kidneys." He distinguishes four principal forms in which those organs are accessible to bi-manual palpation.

1. The kidney shows a clearly demonstrable respiratory mobility with unimportant amount of displacement.

2. Or it shows a dislocation of the first degree—that is, one-third, one-half or two-thirds of the organ can be felt; it is mostly mobile during the respiratory act, can be pushed out of place by the hands, and is dislocated more or less forward.

3. Or it shows a dislocation of the second degree; the kidney can be felt in all its extent, is easily pushed about, moves with respiration, lies near the anterior belly-wall, or can easily be brought thither.

4. Or the kidney is dislocated and fixed in its abnormal position.

Many of such dislocated and fixed kidneys are congenital and of slight clinical importance, but often this condition is acquired when a mobile dislocated kidney becomes fixed by the development of local inflammatory processes. To understand how one degree can be evolved from the other, it is requisite to have a clear view of the etiological moments which condition the origination of palpable kidneys. In the first line we have to take into account the factors which are in a position to loosen or destroy the connections of the kidneys, and so bring them into other than normal relations with the neighboring organs. A few authors suppose that the disappearance of the fat of the capsula adiposa renis is a likely cause. Experience agrees with this view; movable kidneys are frequently met with in the progress of diseases attended by a general loss of fat, as in phthisis, carcinoma, etc., or in acute diseases with high fever, as in typhoid,

malaria, etc. Should the fat of the adipose capsule disappear, and be replaced by a slack, wide-meshed connective tissue, the kidney loses its firm support and sinks downwards by reason of its weight. The tolerably equable pressure it formerly exercised on the peritoneum becomes one-sided and downward, the elastic peritoneum yields and stretches ; a sort of renal mesentery is thus gradually formed, and allows the organ to make similar excursions to those we see normally in organs furnished with a lengthy mesentery. To complete this condition time is required. In proportion as the fat of the adipose capsule vanishes, and the kidney assumes a lower position, its respiratory excursions increase in extent and become more and more accessible to the palpating fingers. While the kidneys sink downward, they recede gradually from the direct influence of the diaphragmatic contractions, and on the right side become affected by the respiratory depression of the liver, which still further continues the dislocation downward. Perhaps this is one reason why right-sided movable kidneys occurs most frequently. As Cruveilhier has pointed out, tight-lacing is also a powerful factor in the production of floating kidneys.

Of not so much importance, in the author's opinion, are frequent pregnancies, abortions, pendulous abdomen, and the supposed causation of hyperæmic swelling of the kidneys occasioned by menstruation (as a consequence of the connections between the plexus ovaricus and plexus renalis) as has been asserted by several authors. Occupation, the doing of hard work or none at all, does not seem to have any influence on the production of movable kidney. Traumatisms, such as falls, blows, gymnastic exercises, etc., have also been credited with bringing about this condition. Probably the mobile kidney was present before the accident which was supposed to originate it had happened. All that has been advanced as casual does not explain the floating kidneys of children and young girls. All the causes cited can only be " opportunity causes " which lead up to movable kidneys or make movable ones more mobile only in a certain predisposition, but of themselves are not able to remove a kidney from its normal place permanently or temporarily, and give to it a cer-

tain amount of mobility. The frequency of this condition, which was once considered an anatomical curiosity, is much greater among women than men. Out of 667 cases tabulated from various authors, 584 occurred in females and 83 in males. It may happen at any age, the greatest number of cases happening from thirty to forty years. It occurs oftenest on the right side; out of 727 cases, 553 were right, 81 left-sided, and in 93 both organs were affected.

If the causes of rena mobilis are obscure, so also the complex of symptoms occasioned by it are uncertain and doubtful. Sometimes no inconvenience is felt; at others pains of a dragging, pinching and boring character are complained of, limited to the affected side or radiating to the other, or to the loins, and between the shoulder blades; they are paroxysmal, brought on by slight exertions, or may take on the form of neuralgia, especially sciatic and intercostal. The annoyances increase during menstruation. Many patients are highly nervous, hysterical, and hypochondriac. The urine is sometimes albuminous and (rarely) bloody. Disturbances of digestion are more frequent; but it is doubtful whether the relation is casual or mere coincidence. Constipation may be caused by the mechanical pressure of the displaced kidney. The occurrence of icterus is explicable by mechanical functional disturbances of the gall-bladder, but the author has never seen this complication in any of his cases.

Patients with movable kidney are subject to sudden attacks of abdominal pain, feeling of anguish, vertigo, vomiting and fever. The cause of this has by some been attributed to strangulation of the kidney in the surrounding connective tissue and peritoneum, giving rise to a more or less circumscribed peritonitis; others blame torsion of the renal vessels, especially the veins, and consequent acute congestion; others attribute it to intermittent hydronephrosis. Slighter urinary disturbances are relatively frequent, colicky pains during micturition, frequent desire to urinate, and slight polyuria; these are generally unimportant and transient. As authors differ about the etiology and symptomatology of this disorder, so they deviate from each other as to its cure. Some see the only possible cure of rena mobilis in

its extirpation, some in nephrorrhaphy, and others object to all operative interference. The author would limit himself to nephrorrhaphy in the very worst cases threatening life and destroying all comfort. Properly constructed bandages are useful, and most in cases accompanied by pendulous abdomen. The author describes one he has found useful. Narcotics and narcotic salves, poultices, and so on, may be needed for the pains, and the stomach disturbances must be treated specially.—*Edin. Medical Journal.*

Koch on Treatment of Tuberculosis.—In concluding his address on bacteriological research before the tenth International Medical Congress, Dr. Robert Koch said :—"I am convinced that bacteriology will one day be of the greatest importance from the therapeutical point of view also. It is true, I look for relatively smaller therapeutical results in the case of diseases with a short incubation period and a rapid course. In these diseases, as, for example, in cholera, the chief reliance will always have to be placed on prophylaxis. I am thinking more of diseases of less rapid course, as these offer more points of attack to therapeutic enterprise. And there is scarcely a disease which, partly on this ground, partly on account of its far surpassing all other infectious diseases in importance, so challenges bacteriological investigations as tuberculosis. Moved by these considerations, very soon after the discovery of the tubercle bacilli, I set about seeking for substances which could be used therapeutically against tuberculosis, and I have pursued this search, which has, of course, been often interrupted by my other occupations, perseveringly up to the present. In the belief that there must be a remedy for tuberculosis I do not by any means stand alone. Billroth has in one of his last writings expressed himself with all possible distinctness to the same effect, and it is well known that the same object is aimed at by many investigators. It seems to me, however, that the latter have not as a rule followed the right way in their investigations, inasmuch as they have begun their experiments on man. To that I ascribe the fact that everything which people have believed themselves

to have discovered in that way—from benzoate of soda down to hot-air treatment—has proved to be a delusion. Experiments must in the first place be made not on man, but on the parasites themselves in their pure cultures ; even if substances have been found which have the power to check the development of tubercle bacilli in the cultures, man should not forthwith be chosen as the subject of experiment. But the question whether observations which have been made in a test-tube hold good also in living animal bodies should first be settled in animals. Only if the experiments on animals have proved successful should the method be tried on man. Proceeding according to these rules, I have in the course of time tested a very large number of substances to see what influence they would exert on the tubercle bacilli cultivated in pure cultures, with the result that not a few substances have the power, even in very small doses, of hindering the growth of tubercle bacilli. More than this, of course, a remedy cannot do. It is not necessary, as has often been erroneously assumed, that the bacteria should be killed in the body ; in order to make them harmless to the body it is sufficient to prevent their growth, their multiplication. I have proved the following substances to be remedies which hinder such growth even in very small doses (to mention only the most important). A number of ethereal oils ; among the aromatic compounds, naphthylamin, paratoluidin, xylidin ; some of the so-called tar-dyes, namely, fuchsin, gentian violet, methyl blue, chinolin yellow, aniline yellow, auramin ; among the metals, mercury in the form of vapor, silver and gold compounds. The compounds of cyanogen were especially conspicuous, their effect surpassing that of all other substances ; even in a dilution of one to two millions they checked the growth of tubercle bacilli. All these substances, however, remained absolutely without effect if tried on tuberculosis animals. In spite of this failure I have not allowed myself to be discouraged from prosecuting the search for growth-hindering remedies, and I have at last hit upon a substance which has the power of preventing the growth of tubercle bacilli, not only in a test-tube, but in the body of an animal. All experiments in tuberculosis are, as every one who has had experience of them

has sufficiently discovered, of very long duration ; my researches on this substance therefore, although they have already occupied me for nearly a year, are not yet completed, and I can only say this much about them, that guinea-pigs, which, as is well known, are extraordinarily susceptible to tuberculosis, if exposed to the influence of this substance, cease to react to the inoculation of tuberculosis virus, and that in guinea-pigs suffering from general tuberculosis even to a high degree, the morbid process can be brought completely to a stand-still without the body being in any way injuriously affected. From these researches I, in the meantime, do not draw any further conclusions than that the possibility of rendering pathogenic bacteria in the living body harmless without injury to the latter, which has hitherto been justly doubted, has been thereby established. Should, however, the hopes based on these researches be fulfilled in the future, and should we succeed in the case of this bacterial infectious disease, in making ourselves masters of the microscopic, but hitherto victorious, enemy in the human body, then it will soon also be possible, I have no doubt, to obtain the same result in the case of other diseases. This opens up an oft-promised field of work, with problems which are worthy to be the subject of an international competition of the noblest kind. To give even now some encouragement to further researches in this direction was the sole and only reason why I, departing from my usual custom, have made a communication on a research which is not yet completed. Allow me, therefore, to conclude this address with the expression of a wish that the nations may measure their strength on this field of labor, and in war against the smallest, but the most deadly foes of the human race, and that in this struggle for the weal of all mankind one nation may always strive to surpass the other in the successes which it achieves.—*Philadelphia Med. and Surg. Reporter.*

Osteogenesis —Prof. Ollier read a paper on the above subject at the late International Congress (*Jour. Am. Med. Ass.*) He began by considering the growth of bone in general, and gave a full account of his researches into these questions, in which,

by a series of experiments performed on animals, as well as in consequence of the numerous operations which he had performed on man, he had been led to the following conclusions: New bone could in reality be formed from the periosteum alone, and only under certain well known conditions. It was perfectly hopeless to expect any complete and permanent growth of bone to take place unless the periosteum surrounded it. It was, indeed, true that if the parts were aseptic for a time, the new bone, or implanted bone, as the case might be, seemed to grow, but this was only for a time. Within six months necrosis took place, and the dead bone, if loose, was thrown off, or might remain encysted in some instances, and, if it did no harm, was certainly of no advantage to its possessor. This was a fact which had been known for many years, and there was, he believed, notwithstanding what had been said to the contrary, no exception to it. If a more minute examination were made of the implanted bone, it would be seen that the changes which took place in it were as follows. It was penetrated by blood-vessels from the surrounding bones and tissues, but these vessels played no part in its nutrition, but served only to further its absorption. Perhaps no more striking evidence of the value of the periosteum could be given than the following. On one of his patients, a young woman, he had operated three times, resecting her elbow-joint on each occasion, but the periosteum had been retained, and on each occasion she made an excellent recovery. Practically there were three kinds of plans which might be employed, which might be styled (1) autoplastic, in which the same bone was used to repair some deficiency in itself, and the bone was only partially severed from its connections—as, for example, where a piece of bone was turned down from the forehead to make a new nose; (2) the second of these plans was well described as homoplastic—that is, when the graft is taken from the same individual, but not from the same bone; (3) the third, or heteroplastic, plan is applied to those cases in which a bone of some other individual or animal is made use of. The first and second plans were all but useless, and the third quite so—that is to say, the implanted bone could not ever grow. With regard to the question of excisions, it was, of course,

a case for either movement or anchylosis. He had nothing to say, except that in the lower limb we must always have anchylosis, and in the upper movement, though an exception might, perhaps, be made in the case of the wrist, where a fixed or partially fixed joint would be more useful to the patient than a movable one.—*St. Louis Med. and Surg. Journal.*

Antisepsis and Asepsis in Surgery.—At the recent meeting of the French Association for the Advancement of Sciences (session of Limoges, Aug. 13th), Terrier of Paris read a communication on "Antisepsis and Asepsis in Surgery." Like Lister, he has abandoned the spray, or if he uses it at all, it is before abdominal operations, when he "pulverizes" a certain quantity of water in the operating room to facilitate the disappearance of the particles of dust contained in the air. As antiseptic, he employs exclusively the bichloride of mercury, a 1–1000 or 1–2000 solution. With these solutions he washes the part that is to be the seat of the operation; his own hands and those of his assistants, after having previously been scrubbed in hot soapsuds and the nails scraped, were washed in the same solutions. The sponges are boiled and otherwise rendered aseptic. For ligatures, he employs only pressed silk, boiled before each operation in a 1–1000 bichloride solution. All the instruments, except the bistouries, ere sterilized by dry heat, the dry stove of Poupinel being employed for this purpose; in this apparatus the instruments are kept without injury for 15 to 30 minutes at a temperature of 160°–180.6°C. As for the cutting instruments, they are first soaked and washed in chloroform, then boiled in sterilized water. The compresses which serve to protect the parts surrounding the field of operation, to cover coils of intestines, etc., are sterilized in the autoclave at a temperature of 120°C., according to the directions of Pasteur; before being used, if found too hot, they may be dipped into tepid water which has been boiled, and thus sterilized. Terrier says that by means of these precautions he has performed a great number of grave operations (ablation of abdominal tumors, cholecystotomies, gastrotomies, etc.) with no untoward result.

As for the dressings which he uses, they are extremely simple. He employs exclusively sterilized wadding—not antiseptic, but prepared by heating in the dry stove, according to the method of Quenu.—*Coll. and Clin. Record.*

Surgery of the Lateral Ventricles of the Brain.—In a paper read before the recent International Medical Congress on this subject by Prof. W. W. Keen of Philadelphia, the following conclusions were arrived at:—

1. Injuries involving the ventricles, the result of compound fracture or of trephining, and involving great disturbance of the cerebral substance, are not necessarily fatal, for 10 of the 26 cases reported have recovered. In these few cases compound fractures and extensive injuries, unless primarily fatal, seem to be less dangerous than rupture of the ventricle from simple fracture. They should be treated antiseptically by drainage and the usual treatment of wounds in other regions. If pus follows, or if the cerebro-spinal fluid becomes dammed back, causing symptoms of pressure, incision and free drainage should be resorted to.

2. In cases of simple fracture involving the ventricles, experience would seem to indicate that it would be wise not to attempt any operative procedure unless threatening symptoms supervene. If necessary to interfere, the cyst containing cerebro-spinal fluid should be continuously and slowly drained by a small bundle of horse-hairs, rather than by freer evacuation. In the majority of cases constant pressure and but little active treatment may be all that is necessary.

3. Abscess of the brain bursting into the lateral ventricle has been thus far uniformly fatal, and demands the promptest treatment possible. The suggestion made for immediate bilateral trephining and irrigation of the ventricles can at least do no harm, although the possibility of its doing good is but slight in so serious a condition.

4. Hydrocephalus, whether acute or chronic, is usually a fatal disease. Surgical procedures for tapping the ventricles for its relief are easy, and certainly do not, *per se*, involve great danger. Whether they will cure the disease is, as yet, not determined.

5. In acute effusions, tapping, with or without drainage, as may be thought best, will certainly save some lives otherwise doomed to be lost; and, in the chronic form, long-continued slow drainage at an early period is at least worthy of a trial, with a reasonable hope of success in a few cases.

6. The methods here described for performing the operation, especially by the lateral route, are at least worthy of a trial, with a view to determine the value of such surgical procedures.

7. After trephining and tapping the ventricles, irrigation of the ventricular cavities from side to side is not only possible, but it does no harm. In abscess involving the ventricle, and possibly in other conditions, it may possibly do good. The fluid used for such irrigation should not contain anything which, if retained and absorbed, might do harm. An artificial cerebro-spinal fluid or a simple boric acid solution would seem to be the best for such use.

8. Convulsions, due to too rapid withdrawal of the cerebro-spinal fluid, may be checked by injecting an artificial cerebro-spinal fluid, or such other innocuous fluid that is available.

9. In either irrigating or injecting the ventricles, it is probably desirable that the air should not enter, but such entrance of air does not seem to be productive of mischief.

10. In hemorrhage into the lateral ventricle, at least of traumatic origin, immediate trephining and evacuation of the clots should be done, which in a few cases will probably be followed by a cure, unless the injury of the cerebral tissue is so great as to be incompatible with life.

Operative Treatment of Carcinoma of the Rectum.—(By CHRISTIAN FENGER, M.D.)—As to the part of a discussion of the subject of malignant disease of the rectum, I shall first say that the results of palliative and operative treatment cannot very well be compared, because each one serves its own limited field of usefulness. The palliative operations will be used where total extirpation of the carcinomatous tissue is either impossible or too dangerous to the life of the patient. Total extirpation should be resorted to whenever there

is a possibility of removing all of the diseased tissue without taking the life of the patient. We will first discuss the palliative operations, which all have the intention of doing away with symptoms of stenosis.

1. Linear rectotomy, as devised by Nélaton, and extensively practised, especially in France, by Verneuil, Trelat and others, consists in division of the posterior wall of the rectum for carcinoma in the median line backwards to the coccyx, and is done with either the knife or the cautery, the cautery giving more security against hemorrhage and sepsis. The effect of the operation is often a very beneficial one, in reducing the frequent, painful passages to few and painless ones. As to its dangers, Verneuil estimates the mortality from the operation at about five per cent., and he states that the suffering from incontinence is small. This operation can only be made use of in low carcinomas, where the finger can reach the upper border of the tumor, and the peritoneal cavity is in no danger of being opened. It should be limited to cases where the wall of the bladder, the prostate gland, the uterus or the fornix of the vagina have been invaded by carcinoma, making total extirpation inadvisable. In regard to this matter, Esmarch states that in the majority of the cases of carcinoma low down, total extirpation is not only possible, but easy, and consequently ought to be preferred.

2. Opening into the rectum from the ischio-rectal fossa above the carcinoma, as devised by Marshall, is practically making a posterior artificial anus above the carcinoma. Spontaneous fistulous openings in this place had taught Marshall that relief from stenosis symptoms took place. This operation, however, has never been resorted to to any extent.

3. Curetting of the carcinoma with the sharp spoon and cauterization of the scraped surface with Paquelin's cautery is another method. The curetting was devised by Simon and the cauterization of the curetted surface by Küster, who has practiced this method of late extensively. He advocates the method very strongly, saying that it affords great relief in inoperable cases. Of from twenty-five to thirty patients, only two died from peritonitis, and Küster estimates the mortality from the

operation at about 8 per cent. Many of his patients lived more than a year, and in a comfortable position. Küster has for years never performed colotomy in low carcinomas. The operation just described is applicable only to tumors low down in the rectum, because in the carcinomas above the line of the peritoneum surgeons always run the risk of opening into the peritoneal cavity. Esmarch has seen cicatrization of a large carcinoma take place after this operation, but still calls attention to the dangers of hemorrhage and collapse following this method.

4. Lumbar colotomy, as devised by Amussat and Callisen, has been extensively practised by English surgeons, but is now rapidly losing ground and being replaced by the more modern modifications of inguinal colotomy. The mortality from the old statistics was high, between 30 and 40 per cent. This mortality has decreased considerably of late, so as to enable Cripps to report fourteen cases without a death. There are certain objections to the method, sufficient to prevent its future use. Prominent among those objections is the difficulty of finding the colon and opening into it at a place not covered by the peritoneum. The descending colon frequently has a mesentery, and it often necessitates great distension to find sufficient space to open into the bowel without opening the peritoneal cavity. The wound is always a deep one, and the artificial anus is in an inconvenient place for cleaning away the fæces, except in patients who are unable to get out of bed. It is impossible to prevent part of the fæcal matter from passing down to the carcinoma and causing the usual irritative effect on the ulcerated surface ; and, consequently, it does not relieve the pain and tenesmus. The advocates of the operation, such as Henry Morris, claim for lumbar colotomy a wider application, as, for instance, in carcinoma of the sigmoid flexure or lower portion of the descending colon, where inguinal colotomy would give no relief. Knies' modification of inguinal colotomy is practicable on the tranverse colon as well as on the cæcum and ascending colon, thus making this claim of advantage somewhat doubtful.

5. Inguinal colotomy, as devised by Littré, or laparo-colotomy, is rapidly gaining favor. The mortality of the operation was in

early times (Batt and Van Frkelen) even higher than in lumbar colotomy, being from 46 to 53 per cent. This was the consequence of opening into the peritoneal cavity without antiseptic precautions. The introduction of antiseptic methods here, as in all other intra-abdominal operations, reduced the mortality to the neighborhood of 5 per cent. König reports twenty cases with only one death from peritonitis; Cripps twenty six cases with only one death.

The attempts to perfect inguinal colotomy had in view, besides guarding against infection of the peritoneal cavity, to effect complete evacuation of the fæces in the place of the artificial anus, so as to prevent any fæcal matter from passing down into the carcinoma, thus preventing irritation and painful tenesmus, and, furthermore, to facilitate the washing out of the carcinomatous bowel from above. Closure of the lower bowel, as devised by Madelung, was thus abandoned, and Knies' method, as modified by Maydl, is the one now-a-days, mostly adapted to fulfill all the indications. When it can be performed in two stages it must be considered almost without danger from peritonitis, and its advantages, as stated by König, are the following: The operation is done openly, mostly outside of the peritoneal cavity, no fæcal matter can pass over the carcinoma, and this can be easily irrigated and kept clean.

6. The radical operation—that is, the total extirpation of carcinoma—should always be done when it is possible to remove all of the diseased tissue without too great danger to the life of the patient. It is the only hope of a radical cure, and a number of permanent recoveries are on record. In the earliest period only low carcinomas were operated upon, as the dangers to life became almost insurmountable the higher up the carcinoma was located. Modern modifications, especially the sacral method of Kraske, has greatly reduced the dangers for the high carcinomas. The removal of part of the sacrum or its osteoplastic—that is, temporary—resection, as devised by Hochenegg, gives ample space for the removal of carcinomas even above the rectum and in the lower portion of the sigmoid flexure. Nevertheless it cannot be disputed that a considerable amount of preliminary operating in

the high or sacral operation causes additional danger from hemorrhage, collapse and peritonitis in patients already reduced in vitality by the disease. If we want to consider the danger of the radical operation for carcinomas from a statistical point of view, we meet with a difficulty yet in the literature that the authors did not distinguish sharply enough between high and low operations.

In comparing the low and high operations, we find that the enormous mortality before Volkmann's time of over 70 per cent. has come down to 36 per cent. By comparing statistics from the literature in 1887, I have collected 272 cases, with a mortality of 22 per cent. In the hands of other operators, however, after that time the mortality has been lowered considerably. Thus König gives us a mortality of his operations, for the last six years, of 16 per cent., and von Bergmann gives us a series of forty-six operations with only three or four deaths; Cripps' thirty operations with two deaths; Hochenegg twelve operations (from Albert's clinic) with no deaths; Hardenheuer thirteen cases with two deaths. It may be reasonable to conclude that the mortality of to-day, with proper selection of cases, may be estimated at between 10 and 15 per cent.

As to the number of radical cures, it is impossible from the literature to give an estimate, but I should expect a radical cure in about 10 per cent. of the patients that survived the operation.

As to the functional disturbance, comparatively little is known, from the fact that little mention is made of the patient's condition in after years. König takes a rather gloomy view of the concondition of those patients, and states that the functional results after the high operation are better than those after the low operation Of twenty-one patients, he considers fifteen in an unsatisfactory state; always unclean except when constipated; and only six had tolerably good power of retaining the fæces. Von Bergmann takes a brighter view of the condition of such patients, and so do most other authorities; so much so that the functional condition of the patient is not permitted to interfere with the choice of operation between palliative and radical when there is a possibility of saving the life of the patient with the latter method.—*Med. and Surg. Reporter.*

On the Nature and Treatment of Eczema.—Unna writes on the above subject in the *British Journal of Dermatology* for August, 1890, and makes a strong plea for the specific nature of the disease. He believes that the true and essential cause is the inoculation of a germ, probably of vegetable nature. The germ, however, proliferates in the epidermis and its appendages, only when the soil is suitable for its growth. The various predisposing and exciting causes which have previously been regarded as the sole causative factors must now be regarded only as preparing the nutrient basis for the reception and proliferation of the germ. The congenital nature of the skin (heredity), supervening diseases, especially those which alter the skin secretions (rheumatism, gout), changes in the skin tissue such as take place at the various periods of life (dentition, menstruaton, climacteric), and other intercurrent diseases of the skin (acute exanthemata)—can be all considered as predisposing causes, or, better, as pre-existing improvements of the nutrient base. External warmth and moisture, simple inflammations and stases, as well as all external irritants, may be described as exciting causes, or better, as accidental improvements of the nutrient base. The parasitic theory, then, instead of denying all the previous observations which have been made on the ætiology of eczema, requires them as essential auxiliary causes. In defining eczema, Unna modifies slightly the definition of Erasmus Wilson, and calls it "a chronic parasitic catarrh of the skin, with desquamation, itching, and the disposition to respond to irritation by exudation and well-marked inflammation." The author concludes his interesting article as follows:

1. The treatment of chronic eczema may be considered with advantage under two heads: (*a*) By the use of antiparisitic measures the germ itself is attacked. This is the direct treatment. (*b*) On the other hand, by it the epidermis, which is the nutrient soil, becomes less suitable for the growth of the specific germ. This is the indirect treatment.

2. The radical treatment of eczema aims at the destruction of every single germ in the depths of the epidermis.

A disappearance of the eczema efflorescence is by no means

equivalent to a thorough cure of the disease, which is, however, always attained by the prolonged and continuous use of specific measures.

3. There are various chronic eczemas, which may be distinguished with certainty by their clinical symptoms and course. They do not by any means always pass through the so-called "stages" of eczema, of which we hear so much, but each form has its own type, its own variations, and of course its own specific treatment. As examples I may quote the eczema of scabies, the seborrhoic eczema, follicular eczema, and papular eczema.

4. As the therapeutics of these ætiologically different eczemas is not the same, I will limit myself to special suggestions for that variety which is the most common—viz., the seborrhoic eczema. This begins as a desquamative erythema, similar to pityriasis, and continues as such, or develops either into an oozing eczema or into squamous or crusted psoriasis-like eruptions. When it becomes vesicular it is chiefly from the effect of external irritation.

For the treatment of this eczema we possess as specifics strong alkalies, several metallic oxides, and the reducing group of medicinal agents. In this series of specific remedies the most worthy of mention are caustic potash, zinc oxide, lead oxide, mercuric oxide, sulphur, resorcin, pyrogallol, chrysarobin, and the various kinds of tars.

5. The choice of the remedy and its form of application are determined in seborrhoic eczema, as in all forms of eczema, by the degree of inflammation which is present.

When the inflammation and oozing are pronounced, the milder specifics are indicated, such as zinc oxide, lead oxide, sulphur, resorcin, in the form of powders, lotions, pastes, and glycerin gelatines. When the inflammation is less and the dryness greater, the stronger specifics, such as chrysarobin, pyrogallol, tar, and mercuric oxide, are indicated, especially in the form of salves, salve mulls, plaster mulls, and waterproof dressings.

6. It may be taken as a general rule that among the remedies and modes of application those must be selected for each case which will produce the most powerful effect on the specific germ (direct or indirect) without exciting an artificial inflammation.

A really "irritating" treatment is not necessary, even in the case of the oldest and dryest eczemas; if only provision is made for thinning down the horny layer (an ordinary sequence), the specific agents will have the desired effect without any irritation whatever. Indeed, an irritating mode of treatment of eczema is only justified on principle when it is used as a test to spots which are apparently healed, in order to recognize the presence of any surviving germs which they may still contain. The alternation of anti-eczematous and provocative treatment corresponds to Tyndall's interrupted sterilization.

7. The only internal remedy which exercises any specific though limited influence on seborrhoic eczema, and especially on its drier forms, is arsenic. All other forms of treatment of the general organism, and of other organs which have a direct association with the skin (such as the bowels, uterus, kidneys), all dietetic cures, all baths (except sublimate baths), may be considered only in so far as they may possibly assist the local treatment of the skin in an indirect way.

8. In the search for new specifics against the various forms of eczema their harmlessness for the general organism must be taken into consideration, and with regard to the reducing medicinal agents in particular it must be noted whether there is an absence of irritating properties in their oxidation products.—*Journal of Cutaneous and Genito-Urinary Diseases.*

On the Diagnosis of Pityriasis Versicolor from Syphilitic Eruptions.—"Few errors are more common in reference to syphilitic eruptions than to mistake common chloasma for such. It is so definitely copper-tinted, that when it occurs to a person who has formerly had syphilis, an erroneous diagnosis may easily be made both by the patient himself and his adviser. A little care is, however, all that is needed, and such an error, if the case be well characterized, can never happen to one well accustomed to skin diseases. There are, however, certain very rare forms of cryptogamic (?) eruptions on the skin which may puzzle even the most experienced. In most of these the microscope is an easy and conclusive

means of clearing up doubt. Not, however, always. I am familiar with cases that present patches which look exactly like ringworm of the naked skin, and which occur without symmetry and apparently multiply from a single parent, just as ringworm does, and which yet never show any fungus. These cases usually happen to be those who have had syphilis, and the difficulty always is to say whether the eruption is or is not specific. The patches are, I think, usually cured by local applications of mercury, whether in lotion or ointment."—*Mr. Jonathan Hutchinson in Archives of Surgery*, April 1890.

Early Maternity.—Dr. Barton Cooke Hirst, Professor of Obstetrics in the University of Pennsylvania, contributes a short article to the August number of the *University Medical Magazine* which goes far to show that, from the point of view of the mother's health, precocious maternity does not involve the evils that are usually ascribed to it. He gives brief notes of the cases of twenty girls who were delivered at ages varying from 14 to 16 years in the Maternity Hospital, four of them under his own observation. In each of the four cases under his own care the labor was easy and uncomplicated, the infant was well developed, and the mother's supply of milk was ample; and he infers from the absence of any record to the contrary that the sixteen others were normal also.—*N. Y. Med. Journal.*

Syphilis Hereditaria Tarda.—Heinrich Neu understands by *syphilis hereditaria tarda* all syphilitic phenomena which have their origin in hereditary infection and appear at a more or less advanced age. He, however, does not deny the possibility that in single cases hereditary syphilis may remain latent for a long time, perhaps until puberty, and only then present severe specific phenomena. As a proof that in such cases heredity, and not syphilis which has been acquired during the first few years of life, was in question, the author considers the grave and general disturbances of nutrition and development which present themselves in such patients, and which are never offered to such a degree by acquired syphilis. The grayish-

white color of their complexion and their earth-colored, leather-like skin he also considers a proof of hereditary syphilis. In regard to the diseases of the bones, the frequently observed solution of continuity between diaphysis and epiphysis (so called pseudo-paralysis), as well as the equal thickening of the anterior border of both tibiæ and the increased transverse diameter of the skull, are to be regarded as characteristic of hereditary syphilis. On the other hand, neither the affections of the joints nor those of the skin or mucous membranes offer anything which could be differentiated from acquired syphilis. Again, the three abnormalities set forth by Hutchinson—*i.e.*, certain diseases of the eye, ear and teeth—are pathognomonic of hereditary syphilis. As regards the eye, keratitis interstitialis profunda is nearly always the result of hereditary syphilis. Disturbances of hearing may be caused indirectly by suppurative processes in the naso-pharynx and Eustachian tubes, or directly by a purulent otitis media, and finally they may also consist in a suddenly appearing deafness without any prodromal phenomena. The development of the teeth is inhibited and their structure changed. At the end of his work the author quotes seven cases of grave tertiary syphilitic affections occurring in middle-aged persons, the histories of which do not mention any specific manifestations shortly after birth or during the first years of life; that in these cases syphilis was in question was proved, besides the objective signs, by the successful therapy; that it was hereditary syphilis was evidenced by the presence of the above-described anomalies in the development of the whole body, as well as in that of certain separate organs.—*Jour. Cut. and Genito-Urin. Diseases.*

Lactation in a Male.—Dr. W. M. Donald reports the following case in the *Medical Age*, which we reproduce on account of the comparative infrequency of such cases: J. V., French Canadian, male, aged 21, married, was brought to Dr. Donald by some friends, more as a curiosity than for treatment, they stating "he gave milk like a woman." On examination he found a well-developed and robust man, with mammæ of normal size, and nothing to indicate any uncommon power. But

on pressure of either breast there was a flow of rich-looking milk, which could be squirted several feet away from the body. He has been aware of this remarkable power for about two years, discovering it as follows: One day when rubbing himself about the chest he found a few drops of milk on the nipples, which, exciting his curiosity, caused him to press upon them, with the result of producing quite a flow. Since then he has often exhibited this power for the curiosity of friends, and finds the milk secreted very readily. Though married two years, he is childless, though his sexual power is good.—*St. Louis Medical and Surgical Journal.*

The Pathology and Operative Treatment of Goitre.—Dr. Berry (*Birmingham Medical Review*, June, 1890) divides innocent forms of goitre into two classes—those in which the whole gland is more or less uniformly enlarged, and those in which the enlargement is due to the development of one or more definite cysts, or solid tumors, generally in one lobe only of the gland. The former is usually met with in young people, and may be regarded as the first stage in the development of nearly all goitres. The goitre consists in some cases of a mere hypertrophy of all parts of the gland, but in most the enlargement is due chiefly to increase in the amount of colloid material in the thyroid vesicles. Each vesicle, instead of containing a small amount of colloid material, as in the normal gland, is much dilated and contains a greatly increased amonnt of secretion. In fact, it would be correct in most cases to look upon the enlargement as being due to a hypersecretion of colloid material into all the vesicles of the gland. There is also some increase in the connectlve tissue and glandular elements. That this hypersecretion is brought about, in the great majority of cases, by some material introduced into the body by means of drinking water, admits of but very little doubt. This form of goitre rarely produces any very serious symptoms, although sometimes these arise from pressure upon the trachea, recurrent laryngeal nerves, and other structures in the neck. Death may result from pressure upon the trachea.

As a rule, goitres involving the whole of the gland compress the trachea in such a manner as to cause lateral rather than antero-posterior flattening. The operative measures for the cure of parenchymatous goitre, excluding injections, the use of setons and ligature of the thyroid arteries, which the author regards as worthy of discussion, are the following:

1. Division of the istnmus with or without removal of a portion of it.

2. Resection as recently introduced by Mikulicz of Cracow, which consists in removing all the goitre except a small piece on each side of the trachea.

3. Extirpation of one-half or more of the gland.

Division of the thyroid isthmus was first performed in this country by Mr. Holthouse, at the Westminster Hospital, in 1874; but for some years it attracted little or no attention until revived by Mr. Sydney Jones, of St. Thomas' Hospital, in 1883, since which it has been extensively practiced. Mr. Jones pointed out that the operation not only gave relief to the dyspnœa, but caused a remarkable diminution in the size of the goitre by inducing atrophy of the lateral lobes. Dr. Berry does not endorse the view that the relief to the dyspnœa is due to the mere mechanical separation of the two halves of the gland, but to the shrinking of the lobes which follows the operation, consequent on the oozing away of the viscid colloid secretion contained in the vesicles of the gland. He has noticed that division of the thyroid isthmus in truly fibrous goitre gives little or no relief to dyspnœa, and is not followed by diminution in the size of the growth as in the more common colloid variety. The relief afforded by the division of the isthmus in the colloid variety may be permanent, but frequently the goitre reappears when the wound has healed and the secretion is again pent up in the gland. In many cases where very urgent dyspnœa is present a mere division of the isthmus will not afford relief sufficiently quickly. It is then necessary to do some further operation, either tracheotomy or the removal of a considerable portion of the goitre, the latter being the more advisable.

Resection, as performed by the Polish surgeon, Mikulicz, is

particularly suited to parenchymatous goitre. He performs the operation in the following manner. He first isolates one lobe of the goitre in the ordinary way, as if he were about to remove it, but takes care to leave untouched the connections on the inner side where it is in contact with the larynx, trachea and recurrent laryngeal nerve, and where the inferior thyroid artery enters. In this region a good-sized piece of gland—enough to carry on the functions of the organ—is left intact, all the rest of the lobe being cut away. The same proceeding is then executed, if necessary, on the other side of the neck. In this operation the dangerous region above mentioned is not interfered with, consequently there is no fear of injuring the recurrent nerves. The goitre is almost completely removed, but the small portions left behind obviate any danger of the supervention of cachexia strumipriva (so-called artificial myxœdema). Twenty-three cases of this operation are reported in Langenbeck's *Archives* for 1888. In twenty the wound healed by first intention ; in two suppuration occurred, which delayed the healing process ; and one patient died from recurrent hemorrhage, the ligature having slipped from the superior thyroid artery.

The remaining operation which may be performed in bilateral parenchymatous goitre, viz., removal of one lobe of the gland, is more easily performed than any operation by which large portions of both lobes are removed. It has the disadvantage, however, that the opposite lobe almost always undergoes some degree of subsequent hypertrophy, causing displacement of the larynx and trachea.

The second class, which may be termed unilateral goitres, never consist of simply hypertrophied gland tissue. The enlargement is due in all cases to the development in the gland of one or more distinct tumors, either cystic or adenomatous growths of some kind. They less often cause death by suffocation than do bilateral parenchymatous goitres. Still they are frequently a source of considerable inconvenience, and even of some danger, to the patient. Hence at times they call for removal, and this may be performed with very little danger. There are two methods of operating—enucleation and extirpa-

tion. The former consists of removal of the tumor alone from the interior of the gland, everything else being left behind, and is applicable only to those cases in which the goitre forms a well defined tumer embedded in the gland. The latter consists in removing the whole of the affected lobe of the gland. The author gave details of cases in which he had operated for unilateral goitre by enucleation, and also one case of extirpation, the tumor weighing 18 ounces, the results in each being satisfactory. The discussion of other methods of treating cystic goitre by tapping, injecting, etc., was outside the scope of the paper.—*London Med. Recorder.*

Exophthalmic Goitre.—When the classical triad of symptoms—rapid heart, protruding eyeballs, and enlarged thyroid gland—is present, nothing is easier than the diagnosis of the affection to which English authors attach the name of Graves, and German writers that of Basedow. Quite different is it, however, if one or more of these signs should be absent or so slight as to escape notice unless searched for. The writer of this article remembers very well a case in his early practice which he mistook for phthisis on account of the repeated occurrence of hæmoptysis; and he has now under his care a case also attacked by pulmonary hemorrhages, which had been variously diagnosed as phthisis, nervous dyspepsia, and hypertrophy of the heart. These two cases further agreed in the absence of exophthalmos, and in the fact that the thyroid enlargement was not perceptible upon casual observation, being hidden by the clothing of the patient, and very slight withal. The early recognition of the affection, however, is a matter very often of prime importance; for it may be stated that, as a rule, the favorableness of the prognosis as to cure varies inversely with the duration of the disease. The difficulty of diagnosis is sometimes as great when the goitre presents itself as a prominent symptom, as when the goitre must be sought for; the most important of the three symptoms being the disturbed condition of the heart. In any case of overacting heart, especially in a neurotic subject, and more especially when associated with other phenomena of

of vasomotor ataxia, Graves's disease should be taken into consideration in the diagnosis and should not be lightly excluded. Even in the absence of demonstrable goitre, a thrill felt within, or in the immediate neighborhood of, the suprasternal notch, associated with a soft systolic blowing murmur, though not pathognomonic, is significant. When this symptom is found, careful observation will often bring to light the existence of a condition of intermittent enlargement of the thyroid gland, which would render the diagnosis certain.

Seeligmueller (*Deutsche medicin. Wochens.*, May 29, 1890) has collated the most recent observations upon the symptomatology, pathogeny and therapy of the disease. According to this author, tremor, to which attention was first directed by Charcot in 1883, has assumed considerable importance as an initial symptom ; thus Lewin observed it in 13 out of 27 cases as the first manifestation of the disease. One of his patients, a boy of 9 years, after a severe fright, suddenly exhibited muscular trembling and stuttering speech, while the full clinical picture of exophthalmic goitre did not present itself until the patient reached his seventeenth year. In the case of a hysterical girl, 17 years old, who came under the writer's care at the medical clinic of the Jefferson Medical College Hospital, nystagmus had existed since childhood ; goitre and cardiac disturbance suddenly developing after a fright consequent upon a fall from a step-ladder. In this case exophthalmos developed under observation. Diminution of electrical resistance of the skin, first observed by Vigouroux and confirmed by Charcot, Eulenberg, von Martius, and Kahler, while not pathognomonic, is an important symptom. It is plausibly attributed to increase of moisture, the result of insensible perspiration. Irregular temperature is another indication of vasomotor instability which may be an aid in the diagnosis. Complications with epilepsy, tabes, ophthalmoplegia externa, irregular bulbar paralysis, polio-encephalitis, paralysis of the limbs, diabetes, polyuria, hysterical paralysis, etc., are reported. The importance of hysterical symptoms in diagnosis has long been known. Of the more recent theories of pathogenesis, only two demand attention :

that which places the origin of the affection in the medulla, and that which seeks it in the thyroid gland. Durdufi has repeated Filehne's experiment upon animals, and has succeeded in producing protrusion of the eyeball by section of the medulla at the level of the auditory nucleus, though he was not able, as Filehne was, to produce goitre and cardiac disturbance.

Hale White has reported the results of an autopsy on a patient who died from pneumonia, after having for years suffered with exophthalmic goitre, in which he found in the floor of the fourth ventricle a number of small hemorrhagic infarcts. These he attributed to the influence of the circulatory sequelæ of the pulmonary inflammation, upon a plan of lowered resistance.

Paul Moebius first put forth the idea that disturbance of thyroid function is the primary stage in the general clinical features of the affection, thus making the disease correlated with myxœdema and cachexia strumipriva. Gautier upholds this theory by citing cases in which surgical operations upon the goitre have caused the disappearance of all symptoms. The study of early cases, however, must negative this view—at least in the eyes of the clinician. In the matter of therapy, recent contributions do not help us much ; although instances of recovery under various methods of treatment continue to be reported. In our own experience, picrotoxin, as recommended by Bartholow, has proved of service.—*Medical News*

Intubation of the Larynx in Croup.—D'Heilly (*Archiv f. Kinderheilkunde*) reports thirteen cases of intubation for croup, the symptoms being such as usually require tracheotomy, namely, persistent dyspnœa, recession of the epigastrium, and commencing asphyxia. The youngest child was nine months old, the oldest four years. Two of the children were too near death to be benefited by any treatment ; of the remaining eleven only two were saved. In spite of this high mortality the author formed a favorable opinion as to the value of the procedure. It involves no loss of blood and no wound, it can be carried out easily, and serious and unexpected accidents are not likely to occur. An unsuccessful intubation can

be repeated, and, if continually unsuccessful, tracheotomy can be performed. Neither shock nor rise of temperature attends the operation, and the air is not cold when it reaches the lung as it is when inspired through a tracheotomy tube.

On the other hand, the tube is frequently obstructed by false membrane, when it must be quickly removed and as quickly reintroduced. American authors recommend that the patient be allowed to cough the tube out, but this was never allowed in d'Heilly's cases. Another objection to intubation is the difficulty of swallowing that it produces, which of necessity interferes with nutrition. Especially is this difficulty experienced in the administration of liquid food, which may be inspired and cause pulmonary disease. Feeding through the nose by means of a catheter may obviate this difficulty, but is attended with others.

The author thus summarizes the conditions in which the method may be used:

1. In very young children in whom tracheotomy offers only slight chances of recovery, and in whom even a slight loss of blood would be harmful.

2. In mild cases of croup which seem likely to continue as such and for which tracheotomy is a severe remedy.

3. In very severe cases of toxic diphtheria in which the patient is already much weakened.

4. In cases of croup following measles, in which tracheotomy in never successful. Intubation in such cases offers a slight chance of success.

5. In all cases in which tracheotomy is impossible or dangerous.—*Archives of Pædiatrics*, October, 1890.

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THE ADDRESS ON MEDICAL EDUCATION BY THE DEAN OF THE FACULTY OF MEDICINE, McGILL UNIVERSITY.

Our age above all others is characterized by the rapidity, number, and thoroughness of the changes that are passing over its entire civilization. In these, every branch of education, every department of investigation has shared. Within the last quarter of a century, and more especially within the last decade, so great and so radical have been the changes in ways of thinking and modes of procedure in consequence, that it may be said without the least exaggeration that the science and the art of medicine are now being *revolutionized.* Corresponding destructive and contemporaneous constructive processes are going on in the literature and science of the profession. If we were to attempt to express in a word the meaning of all this, we would say that medicine is being recognized as a branch of that widest of the natural sciences—biology. Whatever the final issue of the investigations on micro-organisms, so far as the actual direct effect on medicine, we believe that the highest good to this department of human thought and activity will be the clear recognition, by even the mass of practitioners, that scientific medicine is none other than the consideration of the great laws of living things in general, viewed in the light of deviations from what we call a normal condition; but which, from another point of view, are perfectly natural *under the circumstances.* It is the business of the physician primarily to understand the normal, the deviations from it, and the circumstances under which they

occur ; secondarily, to use his art to make it easier for the affected organism to return to the norme. On this hang all the law and the phophets in medicine, as we understand it.

If this be a correct view of the case as it presents itself in our age, it is clear that medical education must undergo changes still more profound than any that have yet affected it. The student must either begin his studies with a fair knowledge of the laws of general biology, legitimately derived from practical study, or he must acquire this early in his college course. Anatomy must become morphology, and be comparative in no small degree if it is to be educative, without losing anything in the extent to which its practical aspects are considered, *i.e.*, its immediate applicability to the practice of medicine and surgery. The student must be prepared to grasp pharmacology and physiology by a sound knowledge of chemistry, both organic and inorganic, as well as physics. Physiology must be comprehensive and scientific. It must rest on foundations as broad and deep as general biology. The human organism can never be understood when isolated from the rest of the animal kingdom, as has been too much the custom up to the present. Every leading medical truth of the day, in so far as it has a scientific foundation at all, takes us outside of ourselves, and explains what we are by lower organisms. There is in medicine the application of the great laws of living things and the methods of their development —in other words, of evolution—organic evolution.

After such a preparation as this, the student enters the hospital ward to study diseased organisms with the spirit of a naturalist. He is, however, a naturalist whose aim is not only to know, but to do ; or, we may say, to know still more by his doing and at the same time relieve suffering, and advance indirectly the moral and intellectual welfare of his race ; for it must be more and more apparent to the thoughtful that the nature of man is a unit, and that the good of one part involves the good of the others, and the reverse.

Nor will the practitioner who hopes to attain the highest results be content with the study of disease in any one animal, even though that be man himself. Medicine is one, because

animal organisms have common laws. Our distinctions into human and comparative (or veterinary) medicine are purely arbitrary and conventional, and their isolation at present is robbing each profession of much helpful light. We look for a closer union of these departments in thought (not in practice of course) as one of those consummations devoutly to be wished. McGill is to be congratulated on the fact that a large step has been taken in this direction by making the Veterinary School of this city, so favorably known over the whole continent for nearly a quarter of a century, the Faculty of Comparative Medicine and Veterinary Science of the University; with a continuation of that close connection in teaching which has long existed between the two faculties. But how are these ideals of medical education to be realized? We believe that the first great requisite for all high achievements is a *profound conviction* of the value of what is undertaken, and that the value depends on the ideal being a true and worthy one.

Buildings will be required in which the practical work of teaching and investigation can be adequately carried on,—in a word, laboratories well equipped with both books and apparatus, so that the investigator may know what has been already done, and have also the appliances for carrying out his experiments on the one hand, and teaching the student practically and *individually* the elements of those sciences he especially needs to know, and preparing him to become an investigator himself, for such in spirit he should be from the first. But a greater need than buildings, books or apparatus is a body of men able to guide, criticise, stimulate and inspire the young workers; in other words, professors capable, enthusiastic and energetic, with a sufficient number of junior assistants so that the heads of departments will not be unduly occupied with minor details that can be well enough looked after by less valuable and expensive helpers. The professor must be left free enough to enable him to keep abreast with the age himself, and give the best that he knows to the *whole profession* in a form it can assimilate. Plainly, the time has come when a professor of any primary branch must be a man of special tastes, education

and capabilities; in fact an expert in the true sense of the term. The great schools of medicine must seek for the best men, and not any longer encourage those occupying subordinate positions to believe that if they only hold on long enough they must needs drop into the professorial chair when the present occupant drops out. The mere hangers-on must be discouraged as much as possible. All appointments should be for a definite period, even to the professorial chairs. In this age, such is the rapidity of progress that even the most industrious specialist can scarcely keep up with the tide of knowledge. Provision must be made to enable men to retire when they are no longer able to maintain the pace. Salaries should be liberal, and a pension fund would be one of a university's best investments, for it would remove some of the hindrances to progress. Men would not be so tempted to hold to their chairs that, as O. W. Holmes says, they can scarce be hoisted from them by the explosion of a petard. The time is not far distant when even clinical chairs must be endowed in this country, if we will keep fully abreast with the age.

But where is the means to come from with which such provisions are to be made? We cannot, as in Germany, look for any such wise foresight on the part of the Government. McGill is a remarkable example of an institution supported almost entirely by the bequests of the liberal and enlightened citizens of Montreal. We place no limit to their good deeds. As yet, little has been done for her Medical Faculty it is true, but sufficient has been accomplished in this direction to show that the people of Montreal believe in the principle of assisting this faculty as well as others.

We congratulate Dr. Craik, the Dean of the Faculty of Human Medicine, on the clearness and correctness of his mental perspective. His address shows that he understands the tendencies of the day, and that, with a hopefulness and determination that would do honour to the youngest man of the Faculty, he is determined to battle for the realization of those high ideals which McGill throughout her whole career has striven to uphold. He has not forgot to mention those worthies who in

the past have done their share nobly to place their *Alma Mater* at the front ; nor those who had the insight and generosity to open their purses to meet her needs ; and it is cheering to realize that McGill's latest medical Dean is so keenly alive to her immediate and future requirements. The graduates of the Medical Faculty of McGill throughout the world, noted as they are for their loyalty, will rejoice at these recent utterances, and will think of the grand old institution with feelings of fitting pride.

It was unfortunate that the University could not furnish the buildings required a few years ago, and that the, as yet, small endowment fund of the Medical Faculty had to be invaded for this purpose. Let us hope that the $30,000 diverted for building purposes may be restored many fold by generous men, who, perchance, may see as we do the relations of progressive medicine to the civilization of the age.

A Chair of Practical Pathology, which shall be as broad as possible, and occupied by an able investigator and teacher of matured thought and experience, would indeed be a great boon, not only to McGill but the whole country. But McGill's needs in other directions are also great, when we adopt the highest conception of medical training. It cannot be expected that men of the very best class can be either secured or retained to give all their energies to the work for any such incomes as are usually available. The same ability used in the practice of medicine brings in a vastly better financial return. It is not good policy to starve the fountain-heads of knowledge, or exhaust them by an endless routine of work that can be equally well done by junior assistants. May the Dean's and our own conceptions of McGill's wants be speedily and fully met. We believe that they will.

Medical Items.

—The latest definition of kleptomania: A taking form of insanity.

—The recent International Congress was attended by 8,831 persons, made up as follows: Germans, 5,561; ladies, 1,379; non-medical, 116; Americans, 623; English, 353; French, 171; Italians, 140; Russians, 471; Turks, 12; Portuguese, 5.

—The late Prof. Gross, after advising the class of the utility of *koumiss* as a nutriment during the inflammatory process, gave the following directions for preparing it: Dissolve a half ounce of grape sugar in four ounces of water. Dissolve twenty grains of yeast cake in four ounces of milk. Pour both into a quart bottle and fill nearly to the top with milk. Cork tightly, fastening the cork with wire. Put into a cool place and shake two or three times daily for three days. *Keep for use no longer than six days.—College and Clinical Record.*

Error of a Hospital Attendant.—Dr. L., passing through the Military Hospital, perceived the belly of Major K. to be tremendously swollen. "Ah!" exclaimed the doctor, "you are very ill, Major. Your abdomen is swollen to excess. You appear to have dropsy." To which the Major retorted: "No wonder after that nurse gave me twelve one-quart injections successively." The physician proceeded to inquire into the case, and discovered that the nurse, in place of writing down one injection for number twelve, had written down twelve injections for number one.

A Prudent Patient.—M. de Montlurin, of Pont de Veyle, loved his bottle; he fell sick and called in a physician. The doctor was cruel; not only did he interdict wine for his client, but he prescribed hot water in large quantities. Madame de Montlurin, desirous of carrying out the prescription of the physician, soon after the departure of the latter, appeared at her husband's bedside with a large glass of limpid and beautiful hot water. The patient rose in bed and taking a swallow, commenced to gag; after handing the glass back to his wife, said, reproachfully, "My dear, keep the remedy for another time. I have always heard it said that it is dangerous to trifle with medical remedies. Hand me the brandy and soda. If I must die, I do not desire death by drowning." The patient recovered without the hot water or a physician.

THE SPANK CURE.—The *Chicago Inter-Ocean*, quaintly but sensibly, remarks: "Among the good old customs which are falling into disuse, that of spanking the coming generation into behaving itself is leading the procession. There are no such spankings now as there used to be in my time, and I am sorry for it. Things in the spank line are certainly degenerating, along with the drama, the flavor of strawberries, and phenomenal weather, as the years go by. Children just entering the heated, base-burning epoch of spankhood now have "nerves," and must be humored. They get to balking and skulking, and the family physician is called in when the good old housewife remedy of a warm application of slipper is all that is needed The spank cure is not appreciated in this generation as it was in the last. Looking back on a stormy and tempestuous career in the woodshed with Jones *pere* at the helm, I now feel like writing him a kind and encouraging testimonial on the efficacy of his unapproachable spank treatment, although at that time I felt more like kicking him in the shins, and, I regret to say, sometimes gave vent to my emotions."

—A "Surgeon," who had used alum, belladonna, bismuth, and boracic acid for sweating feet, with little good result, wrote to the *British Medical Journal* (quoted in *N. Y. Med. Abstract*) and received the following replies: 1. Wear low shoes, wool socks. and dust the feet over twice a day with iodol; they will soon be as hard, sweet and comfortable as one could wish. 2. Wash the feet at night with very hot water, put on white cotton socks, and immerse the feet, thus covered, in methylated spirit, poured into a basin; wear the socks all night; they will soen dry in bed. During the evening wear cotton socks and common felt slippers, and keep the socks constantly saturated with spirit. In a week the cure will be complete. The best ventilated boots are made of stout canvas. 3. Liq. plnmb. diacet., acid carbolic, āā ℥ij; aquæ ad, ℥ij; M. One teaspoonful to be mixed with a pint of warm(ish) water, and the feet washed every morning and dried with a soft towel. 4. Wash the feet night and morning with soap and water, and after careful drying sponge them over with the following lotion: Plumbi acet., ℥j; acet. destil., ℥j; sp. vini methylat., ℥ij; aq. ad ℥xvj. Sig.—Ft. lotio. I have found this so efficacious that I use no other treatment. Shoes are preferable to boots, but whichever are used I recommend those of buckskin, which is very soft and easy to the feet. The inner sole has several perforations communicating with the outer air by a tube in the heel. Patients have expressed the greatest comfort from the use of these boots. —*College and Clinical Record.*

Literature.

LIST OF PAPERS, ETC., PUBLISHED BY WESLEY MILLS, M.A., M.D., L.R.C.P. ENG., D.V.S., ETC., ON EXPERIMENTAL PHYSIOLOGY, CHEMICAL PHYSIOLOGY, ZOOLOGY, COMPARATIVE PSYCHOLOGY, ETC. (original papers).

I.—PHYSIOLOGY.

Published in the Journal of Physiology, of Cambridge, England.

1. An Examination of Some Controverted Points of the Physiology of Voice, especially the Registers of the Singing Voice and the Falsetto.
2. Some Observations on the Influence of the Vagus and Accelerator nerves of the Heart of the Sea-Turtle.
3. The Innervation of the Heart of the Slider Terrapin (*Pseudemys Rugosa*).
4. The Heart of the Fish compared with that of Menobranchus, with special reference to reflex inhibition and independent cardiac rhythm.
5. The Secretion of Oxalic Acid in the Dog under a varying diet, (a Modification of "Ueber die Ausscheidung der Oxalsäure durch den Harn," published by the author in Virchow's Archiv).
6. Notes on the Urine of the Tortoise, with special reference to Uric Acid and Urea.

Published in Medical News, Philadelphia.

7. Uric Acid—(*a*) Its Medical Relations.
   (*b*) A Reliable Method of Quantitative Estimation.

Published in the Journal of Anatomy and Physiology, Edinburgh, Scotland.

8. On the Physiology of the Heart of the Alligator.
9. The Rythm and Innervation of the Heart of the Sea Turtle (published contemporaneously in the *Canadian Record of Science*).
10. Physiology of the Heart of the Snake.

Published in the Canada Medical and Surgical Journal, Montreal.

11. The Causation of the Heart-beat and other Problems in Cardiac Physiology.

Published in the N. Y. Med. Journal.

12. Influence of the Nervous System on Cell Life.
13. The Blood and Bloodvessels in Health and Disease.

III.—ZOOLOGY.

Published in the Canadian Record of Science.

1. Life in the Bahama Islands.

II.—COMPARATIVE PSYCHOLOGY.

Published in Popular Science Monthly, March, 1887.

1. Comparative Psychology: Its Objects and Problems.

Published in Science, May, 1887.

2. Reply to Criticism of the above.
3. The Habits and Intelligence of Squirrels (Proc. Roy. Soc. of Canada).
4. Comparative Psychology (Journ. Comp. Med.).

IV.—TRANSLATION.

Professor Hoppe Seyler's Address at the Celebration of the Opening of the Institute for Physiological Chemistry, (Ueber die Entwickelung der Physiologischen Chemie und ihre Bedeutung fur die Medicin), published in the *New York Medical Journal.*

V.—BOOKS.

1. Outlines of Lectures on Physiology (as delivered in McGill University).
2. A Text-Book of Animal Physiology (large 8vo., 700 pp., D. Appleton & Co., New York).
3. A Text-Book of Comparative Physiology (small 8vo., 630 pp., D. Appleton & Co., New York).

VI.—REPORTS OF INVESTIGATIONS WITH CRITICAL DISCUSSION.

Published in the Journal of Comparative Medicine and Surgery, Philadelphia.

1. Snake Poison from a Chemico-Physiological Point of View.
2. Elasticity as a Conservative Force in the Animal Organism.

Published in the Canada Medical and Surgical Journal, Montreal

3. Hæmodynamics and Blood-Pressure.
4. The Blood and Blood-forming Organs.
5. Heredity.
6. The Heredity of Acquired Peculiarities.

And many other shorter communications.

VII.—MEDICAL SUBJECTS (CHIEFLY ORIGINAL).

Published in the British Medical Journal, London.

1. Report of a Case of Poisoning from the Local Application of Ergotin.

Published in the Canadian Journal of Medical Science, Toronto.

2. Some Mistakes to be Avoided in Dealing with the Diseases of the Nose and Throat.
3. Report of a Case of Congenital Ectopia of the Abdominal Organs.
4. Two Cases of Malignant Disease of the Stomach.

Published in the Canada Medical and Surgical Journal, Montreal.

5. Notes of a Trip to Colorado.
6. The Voice in Diagnosis and Prognosis.

7. Fatality in Typhoid Fever.
8. Chronic Pyæmia following Urethral Dilatation.
9. Clinical Notes on Atropine Poisoning.
10. Obstetrics of the Hamilton City Hospital for Two Years.
11. On a Case of Thrombosis of the Left Ventricle.
12. Tonsillotomy and Uvulotomy.
13. London Letter: Surgical and Anatomical Notes.
14. " " Jottings on Gynæcology.
15. " " Notes on Dermatology.
16. " " Abstract of a Clinical Lecture by Dr. Wilson Fox.
17. Innervation of the Heart of the Slider Terrapin (Medical Aspects).
18. On the New Strassburg University.
19. Physiological and Pathological Reversion.

Published in the Medical News, Philadelphia.

20. The Berlin Laboratories.
21. Surgical Puncture of the Heart.

Published in various Journals.

22. A Case of Extreme Enlargement of the Tonsils causing Urgent Symptoms (*Archives of Largngology*).
23. Pathological Notes from a Breeding Station (*Journal of Comp. Med.*).
24. A Physiological Basis of an Improved Cardiac Pathology (*N. Y. Med. Record*).
25. Case of Lightning Shock with Recovery, with Drs. Buller and Paige (*Med. News*).
26. Valedictory Address to Grad. Class in Medicine of McGill University (*Montreal Medical Journal*).
27. Retention and Loss of Hair (*Can. Record of Science*).

VIII.—Of a Semi-Popular Character.

Published in the Canada Educational Monthly, Toronto.

1. The Structure and Physiology of the Eye.
2. Some Thoughts on School Hygiene.
3. Exertion and Over-exertion.

Papers on Literary and Educational Topics, and others not specified.

Summary.

On Experimental and Chemical Physiology, Zoology and Comparative Psychology	18	papers.
Translation	1	"
Critical Reports of Scientific Investigations	6	"
Papers on Medical subjects.....	27	"
" of a semi-popular character.....	3	"
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Books	3	

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Original Communications.

ON AN UNUSUAL CAUSE OF PERITYPHLITIS.

BY WYATT JOHNSTON, M.D.,
Demonstrator of Pathology, McGill University.

Owing to the fact that perityphlitis, whether purulent or not, has come to be regarded as always due to ulceration of the vermiform appendix, the following observations seems worth putting on record:—

The patient was admitted to the General Hospital under the care of Dr. Wilkins and afterwards transferred to that of Dr. Molson, to both of whom I am indebted for kind permission to use the notes of the case.

John C., æt. 36, sailor, admitted June 7th, 1890, for severe diarrhœa with great tenesmus. Had a severe attack of dysentery (1) three years ago, while on a voyage to the West Indies. Since then has had occasional attacks of diarrhœa. Had severe constitutional syphilis following a primary sore five years ago. While in hospital the diarrhœa was characterized by frequent small liquid stools, accompanied always by great tenesmus and not yielding to the usual remedies. The possibility of intestinal syphilis was thought of and he was given iodide of potassium three times a day, in doses of ten granis, without effect, the remedy being then discontinued. After being over four months in hospital the patient died of exhaustion. Towards the close of the case the urine contained a moderate amount of albumen. It should be mentioned that a digital examination of the rectum failed to reveal any lesion. During the time he was under ob-

servation in hospital there were no signs or symptoms pointing to perityphlitis.

Autopsy (performed Oct. 22nd, 1890, 36 hours after death). —Multiple condensing osteitis of tibiæ and cranium. Extensive amyloid degeneration of kidneys. In abdomen a large irregular fibrous mass about the head of the cæcum. The vermiform appendix lies just below the brim of the pelvis on the right side, and is embedded in dense fibrous tissue. The mass of fibrous exudation so formed is as large as an apple, and is intimately adherent with the upper end of the rectum and lower part of the sigmoid flexure, at a point opposite the second sacral vertebra, on the right side. The rectum appears to descend into the pelvis on the right side. On slitting up the intestine, the ileum, cæcum and ascending colon are found to be normal. The appendix vermiformis is twisted and constricted in many places by the adhesions formed about it. The bowel is much narrowed at this point. The base of the ulcer is formed by the fibrous mass above referred to, and a ragged sinus extends about two inches into it. No signs of suppuration exist. Another similar but smaller ulcer is situated near the splenic flexure of the colon and has formed adhesions with the anterior abdominal wall. The portion of intestine between the two ulcers shows slate-like pigmentation and is dilated, containing soft dark gray fæces.

The condition present was obviously one of severe syphilitic ulceration of the intestines. The extensive chronic adhesive perityphlitis was probably of very old standing and had become latent before the patient came under observation here. In looking up the literature of the subject I have been unable to find any exactly similar case reported. In most cases where the condition has not been due to appendicitis, it was secondary to some ulcerative or cancerous condition about the cæcum, or in connection with some form of intestinal obstruction. Here, the primary cause was situated in a portion of the bowel not normally in very close connection with the cæcum or appendix. The reason appears to have been the right-sided position of the rectum, an anomaly found in five or ten per cent. of all bodies examined, bringing the upper part of the rectum close to the right iliac

region. In view of the increasing frequency of operations in this region in cases of perityphlitis it is worth remembering than an inflammatory condition in the region of the appendix may exist when that structure is itself free from disease and the possibility of the condition being due to tertiary syphilis is instanced by this case.

TWO CASES OF PNEUMONIA IN PUERPERAL WOMEN.

By Ed. Evans, M.D., of LaCrosse, Wisconsin.

Case I.—*Pleuro-pneumonia.*—Patient, aged 36, VIII-para, epileptic, miscarried at the seventh month; breech presentation. Child, placenta and membranes came away together. Child dead and had a disagreeable odor (reported by nurse).

I saw her a few hours later and found her feeling well. Pulse 80; temperature 99½°. I gave a vaginal douche and ordered a few doses of quin. sulph. gr. v. She progressed nicely till the fourth day, when, after some chilly sensations, she was seized with severe "stitch" in right side, beneath the last three ribs, pressure on which aggravated the pain. Examination of the lungs revealed nothing except shallow respiration, probably due to pain. There was no abdominal fulness or tenderness; the uterus was well contracted; the vagina was not hot or tender; uterus freely movable, not tender, and no infiltration about it. Lochia normal, scanty. Pulse 100; temperature 100½°; respirations 32. Next day she was somewhat better; but on the following day she was seized with very severe pain in the right shoulder, extending downward. There are a few small râles (or friction sounds) near base of right lung; expansion restricted and respiration weak on right side. Pulse 84; temperature 101; respirations 36. Next day, pulse 80; temperature 99.5°; respirations 30; feels better. In lower third of right lung there is consolidation, blowing breathing, and subcrepitant râles. On the following day, pulse 70; temperature, 98°; respirations 25. No pain or distress, and she rapidly recovered.

At no time was there cough, except an occasional hack during the last two days of the febrile stage, and there was no expec-

toration at any time. The lochia was normal throughout, and there was no blood in it after the fifth day: She is a strong, vigorous woman, the weather was fine, and she had not been exposed in any way, and she never suffered from lung trouble before. There was little, if any, pneumonia in the city at the time, and as I think sepsis can be absolutely excluded, I see no way of accounting for the attack.

Case II.—*Pneumonia.*—II-para, aged 27, On Sept. 20th, 1890, Mrs. S—, after a short, normal labor, was delivered of a healthy child. Everything went well till the 27th, the appearance of the milk causing no disturbance whatever; lochia normal and scarcely blood-stained.

Sept. 27*th.*—Pulse 88; temperature 99.5°. There is pain in legs and tenderness along the external saphenous veins, and also in right groin; no swelling. (She had some pain and tenderness in some places occasionally during last month of pregnancy.) There is no abdominal tenderness, pain or fulness whatever. Uterus well contracted and not tender. 28*th*—Feels better, no pain, and temperature 98.5° in the evening. 29*th*—Had chill at 10 A.M.; pulse 120; temperature 103°; respirations 25; no abdominal symptoms; examination of lungs negative; legs same as on the 27th. 30*th*—Passed a restless, sleepless night; pulse 120; temperature 104.5°; respirations 36; legs better; no abdominal symptoms; lungs normal, except that she complains of tenderness on percussing along vertebral border of right scapula; respirations weak and harsh at root of right lung, no dulness, no râles; she has slight sore throat, no cough

Oct 1*st.*—Temperature 102° (morning), 104° (evening); pulse 120; respirations 36. During the night she coughed a little and expectorated a very little sputum streaked with blood, which she thought came from her throat; limbs seems well; lochia normal; herpes labialis appeared during the night. On percussing right lung, there is very slight dulness about the angle of scapula; the respiration in this lung is weak and harsh, and expiration rather bronchial about angle of scapula. 2*nd*—

Pulse 84 ; temperature 98½° ; respirations 28 ; she slept quietly during latter part of night and feels well this morning ; no change in lungs ; evening temperature 99.5°. *3rd*—Morning temperature 99.5° ; pulse 96 ; respirations 24 ; during the night there was some pain in right iliac region and a slight flow of bloody, offensive matter from the genital tract, continuing in lesser quantity during the day ; no tenderness or fulness about the uterus, which is small in size and well contracted. I washed it out, but the water came away clear and free from offensive odor, nor was there at any subsequent time any offensive or considerable discharge. Evening temperature was 103°, and during the night the temperature rose to 104½°. *4th*—Temperature ranged from 102° to 103½°, without any more marked physical signs in the lungs than noted before ; respirations 32, very little cough, and no expectoration. *5th*—Passed a good night ; pulse 100 ; temperature 98.5° ; respirations 27. She feels very well ; coughing a little more. *6th*—Pulse 80 ; temperature 98.5° ; respirations 28. Examination of lungs shows the left lobe normal ; in right there is slight dulness or diminished resonance over central part of right, posteriorly, while the respiration is more distinctly bronchial, but not blowing ; no râles. Some cough, without expectoration, continued for a few days. There was good involution of uterus. She rapidly convalesced, and was sitting up by the 8th.

During the progress of the case some facts in connection with it served to render the diagnosis more or less doubtful. The satisfactory and rapid progress during the first six days, and the absence of all symptoms referable to the uterus up to the 13th day, would seem to exclude septic infection through the genital tract. When the chill occurred on the 29th it had been preceded for a couple of days by symptoms of phlebitis. Was the fever, quickened respiration and general prostration, and indefinite physical signs in the right lung due to a similar condition in lungs, or was it due to the onset of croupous pneumonia ? The appearance of herpes and the characteristic crisis on the morning of the 2nd October would seem to favor the diagnosis of pneumonia. The appearance of an offensive discharge on

the night of the 2nd, followed by a relapse, introduced a new factor of doubt, and now, if it be not regular pneumonia, is it a case of sepsis or some thrombotic process (septic or otherwise) in the lungs? The occurrence of crisis on the night of the 4th, the rapid disappearance of all symptoms and quick recovery, satisfied me that it was a case of croupous pneumonia which ran a somewhat irregular course. The marked feature in each case was the almost entire absence of such symptoms as cough and expectoration. In the first case the physical signs were late in appearing, while in the latter at no time were they well marked.

THE INFLUENCE OF CLOTHING ON THE SKIN.*

By J. Leslie Foley, M.D., L.R.C.P. (Lond.)

Scattered throughout cutaneous literature are many hints as to clothing. It has been my object, in brief outline, to collate these: grouped in one picture, as it were, with which to refresh your memories. Since Adam and Eve first discovered their nakedness in the Garden of Eden and made themselves habiliments of fig-leaves, the subject of dress is one that has been uppermost in the mind of mankind—or shall I say womankind. From the primeval fig-leaf to the nice refinements and vagaries of the modern fashionable dressmaker or tailor the gradations have been great. One might almost trace in the change and variety of costume the changes that have taken place in the several nations from the earlier eras to the present time. The ancient garment was a far healthier one than the modern. The flowing toga, the chlamys, the antique peplum, the sandal allowed more free movement of the body. In the modern ball-room costume there is a tendency to revert to the primal fig-leaf-style. But while man has ever been mindful of his exterior adornments, while the ancient as well as the modern youth (historically, not relatively, speaking of course) have always been on the lookout for the latest things in hats, the latest things in coats, the latest things in ties—while woman squeezes her waist tighter than the most ardent lover could ever hope to do—while advanced ideas on dress are dominant, mankind, for the most

* Read before the Medico-Chirurgical Society of Montreal.

part, are far more apt to regard it from a decorative rather than from a sanitary point of view.

The animal and vegetable kingdoms furnish man with his clothing materials. Silk, wool, hair, feathers from the animal. Hemp, flax, cotton from the vegetable. The cardinal clothings are wool, linen, cotton, silk. Wool and cotton are principally used—wool in the cold climate, cotton in the warm. Wool stands pre-eminent as a good conductor of moisture, a non-conductor of heat, and for its electrical properties. Linen attracts moisture, cotton does not, nor does silk, but it may disturb or excite the electricity of the skin. It has been known to set up a dermatosis.

Color.—Dark colors absorb and radiate heat. White are bad radiators and absorbers of heat, for this reason light clothing is the best for summer; white is the least absorbent of odors and gases. Physicians and nurses are best dressed in white. Clothing affects the skin, for good or ill, in health and in disease.

In health.—One of the requisites for maintaining the skin in a normal condition is proper clothing. Treves has formulated the requirements of healthy dress—

(1) A perfect covering for the body.

(2) Maintenance of an equable temperature.

(3) Absence of superfluous material and needless weight.

(4) Non-interference with any of the functions of the body.

Not seldom you see young girls whose trunks are well covered, but whose upper and lower extremities are sadly deficient in any covering save the exterior garment. Heat and cold must be guarded against. The former producing miliaria, erythema calorica, increase of pigment, etc.; the latter, dermatitis congelationis, pruritus, erythema pernio, etc. Cold causes contraction of the capillary blood-vessels of the skin and the blood is determined to other organs—lungs, kidneys, etc. Cold lowers the nutrition of the body. This may account for the more frequent occurrence of skin diseases in winter-time.

Over-clothing should be avoided. All no doubt are familiar with the over-clad baby, garment after garment, layer after layer of material zealously placed on the darling, almost smothered in

its own clothes. This often leads to an eczema, intertrigo, hyperidrosis, etc. This sometimes applies to people of riper age. The warmth of the bustle and the gathering too many heavy skirts around the pelvic region often leads to congestion of these parts, sets up some uterine trouble, and this may give rise to a skin affection. As is well known, every organ of the body has its influence (directly or indirectly) on the skin. To cripple or interfere with the function of any of the organs of the economy would be to cripple the skin. All compressian should be shunned. The liver, spleen, etc., should not be compressed by tight-lacing, nor the intestines by tight waist-bands. Everything that impedes the circulation of the skin must be strenuously avoided—tight sleeves, collars, garters, boots, gloves, etc. Tight garters may give rise to varicose veins, chilblains, eczema. If used they should be tied above the knee, but it is better to discard them and wear bands suspended from the waist. The belt should not be worn, *Insufficient clothing* should be remedied. Those having sedentery occupations in a warm room both in winter and summer need more clothing than those out-of-doors and hardened to cold. Infants and old people need more clothing. Frequent changing of clothing from a light to a heavy texture, and *vice versâ*, is bad, nor should one be too ready to drop the winter flannels. Boerhaave says "our winter clothing should be put off on midsummer day, and put on the day after." The clothes should not be cold when put on, nor kept in a cool place. They should be loose. This allows of a more ample stratum of air within the meshes and between the layers, which, being warmed by the body heat, are warmer than tight-fitting clothes. On retiring they should be removed and hung up to be aired.

Close dresses (Macintoshes, etc.) are objectionable, as they do not allow of free transpiration—skin respiration. This applies also to rubber socks and shoes.

Gloves.—Buck holds that silken and woollen gloves are more apt to lead to chilblains than kid or dogskin. Except in winter-time, or in those prone to chilblains or of feeble circulation, they should not be worn.

Boots.—Shoes healthier than boots for the young. Laced

better than elastic. Patent leathers retain the sweat. Uppers should be soft. Heel low. Toes square.

Stockings and Socks.—Woollen fabrics the best; silk next. Cotton should not be worn. Socks worn square-toed. Digitated toes advised by some as being more cleanly.

Night attire should be of linen or cotton. Woollen not worn except by old people, children and the rheumatic. Linen gives rest to the skin which may have been unduly stimulated by the woollen garments. All experience a sense of relief when the day-clothes are taken off.

The Head.—Babies should never wear caps. No head-dress should weigh more than five or six ounces. Felt is the best material for hats. Soft, broad-brimmed hats are the best. Boys should wear caps of the softest and lightest texture. Ladies should not wear combs.

The Neck.—Tight and stiff collars should not be worn. It prevents the proper use of the arms. The circulation of the neck should not be impeded.

In Infants the following obtain. Should be warmly clad. Woollen clothes. Body evenly covered. Head kept cool. Clothes free from constriction of any kind. Bandage abolished (it constricts region of heart, lungs, liver, etc.). Compresses and pads avoided. Avoid over-clothing.

Underclothing should be woollen, silk or gauze being used if it be too irritating and cannot be worn next the skin. The clothing covers a multitude of sins and disguises many diseases, especially of the skin.

In Disease.—While clothing is necessary to keep the skin in condition, it is often the means of giving rise to a dermatosis.

(1) It may serve as a nidus for pediculi or parasitical affections.

(2) It may irritate a healthy skin by roughness and friction, and set up an eczema, pruritus, or dermatitis.

(3) It may excite a diseased one.

(4) It may convey poisons to the skin and set up a dermatitis, etc.

(5) By increasing the warmth of the part it may excite or increase the growth of parasitic fungi—tinea versicolor, etc.

(6) In excessive quantity it may increase perspiration and cause hyperidrosis, etc.

(7) Pressure of clothing, tight sleeves, boots, etc., may produce erythema, callus, eczema, venous congestion of the skin, etc.

(8) The pressure of articles of clothing on special parts determine the localization in some cases; *e.g.*, syphilitic paronychia is much commoner on the toes, where the shoes exercise pressure, than on the hands, where there is no pressure; where the clothes press is where the itching and resulting blood-capped marks appear in pruritus senilis.

(9) It may serve as a carrier of infectious and contagious diseases.

(10) By increasing the blood supply, the irritation of clothing or wearing heavy garments, flannel, etc., increases the itching of the part.

Poisonous dyes in clothing.—Arsenic is the ingredient in the majority of cases. There is scarcely an article worn next the skin that has not at some time or other been made the vehicle for transmitting poison to the body. Red chest-protectors, bright red-tinted flannel shirts, socks and stockings of the same color, black silk gloves, magenta colored wool and even hats have given rise to cutaneous eruptions. Bichromate of potash, lead chromate, eosin, etc., are sometimes factors. Dr. Harrington* of Boston was at a loss to explain certain cutaneous eruptions characterized by ulcers; when he discovered that the patients had been wearing stockings, etc., dyed with bichromate of potash. All colored clothes should be boiled before wearing. The dyestuffs in the lining of shoes may permeate the stockings and produce a dermatitis of the feet and legs. Duhring reports such cases. The cuffs may irritate an eczema of hand or arm. A rough collar or clothing around the neck may irritate an eczema or dermatitis of that region. The bedclothes may irritate an eczema. Irritation of stays near breast, friction of underclothing, may induce a circumscribed scleroderma—(*Crocker*). If there is much exudation in an eczema and a powder is applied,

* Boston Med. & Surg. Journal, Aug. 12, 1886.

it crusts up with the exudate and may cause the clothing and bedding to adhere to the diseased surface. False hair may set up an eczema of scalp or forehead ; a bad ear-ring an eczema of ear. Friction from hat-bands, "frizzes," "bangs" and dyed veils may produce acne—(*Wigglesworth*). In soldiers the helmet sometimes gives rise to an eczema. A stiff, ill-ventilated hat may produce alopecia.

The dermatoses principally affected by the clothing are :

Dermatalgia—The clothing becomes simply unbearable.

Dermatitis Congelationis—Tight clothing and boots tend to it.

Erythema Intertrigo—Heavy underclothing, tight or ill-fitting garments ; hard, foul and wet diapers may cause it.

Urticaria, *sudamina*, *hyperidrosis*, *bromidrosis*, *miliaria* may all be caused by too heavy or tight underclothing in hot weather ; flannels or apparel colored with poisonous dyes may produce urticaria ; woollen fabrics may cause miliaria.

Eczema Genitalium—Eczema of the genitals may be excited by the irritation of the clothing while walking. Sweat may be effused in a normal condition upon and with articles of clothing and cause a stench by chemical changes both in the clothing and fluid. Urine may be retained upon the underclothing and set up a persistent dermatitis of the scrotum, perineum or inner surfaces of the thighs in either sex.

Onychogryphosis—Tight-fitting gloves, boots and shoes may cause it.

Pruritus—Heavy bedclothes or the friction of the clothing may produce it.

Pruritus Digitorum Pedis. Acute and Chronic Eczema.—Irritation of underclothes or dyes contained in them.

Erythema Pernio. Furunculi—Irritation of clothes.

Seborrhœa Corporis, or Unna's *Eczema Seborrhoicum*—Flannel may produce these, also *Tinea Versicolor*, and in infants the so-called *Lichen Strophulosus*.

Acne—Woollen fabrics. Acne artificialis limited to the forehead may be caused by the irritation of some enamelled hat-band, likely containing arsenic. This should be replaced by a soft linen or silk lining. A feather pillow often increases the congestion of the face in acne.

Pityriasis Rosea—Unwashed flannels may cause it. According to Hutchinson, the irritation of a new woollen vest may bring out on the trunk in a syphilitic subject an eruption. A non-specific eruption resembling syphilis may be set up from like cause (vest-rashes).

Seeing how seriously the clothing may damage the skin, it behooves one to look well to and guard against its deleterious influence.

Rules as to Clothing in Skin Diseases.—It is the inside rather than the outside clothing that mostly affects the skin. If the disease be chronic and indolent, flannel shirts and drawers may be worn next the skin. If irritable and inflammatory, soft and frequently washed old cotton (an old night-shirt or old cotton drawers). In acute and subacute eczema the bedclothes should be as light as possible. The clothing should never be rough enough to irritate the skin; free from all poisonous dyes; properly washed and frequently changed. All restriction and constriction must be avoided. All woollen clothes should be discarded and removed from the room so that the conidia or spores may not become entangled in their fibres and aid in spreading the disease in tinea tonsurans. All flannels avoided in tinea versicolor, pruritus, seborrhœa corporis, and silk worn next the skin. In pruritus digitorum pedis, stockings changed often; shoes and boots broad and easy. Erythema pernio, undercloth-ing woollen and warm; stockings and gloves of same material; wear cork soles inside boots to prevent chills. In miliaria, sudamina, urticaria, hyperidrosis, clothing light. Erythema multiforme, silk or softest linen worn next the skin. Top boots not worn in an eczema, they heat the leg; masks, rubber gloves, bandages, etc., protect from scratching, and from other injurious influences, water, dusts, etc. Dr. Bulkley recommends, in an acute eczema of arm, that a vaccinator shield be applied to protect it from the clothes. And I venture to suggest, as a means of preventing the weight, heat and irritation of the bedclothes in a patient confined to bed with an eczema or any inflammatory skin disease, elevation of the bedclothes with wooden or iron sticks bent in the form of a bow across the bed and held together

by bars running across the top and along the bottom. In pediculosis the clothes should be baked or boiled. In scleroderma flannels are desiderated. While clothing cannot be strictly classed as a line of dermatological treatment, careful and minute attention to it will certainly add to its success.

Retrospect Department.

QUARTERLY RETROSPECT OF MEDICINE.

By R. L. MacDonnell, M.D.,
Professor of Clinical Medicine in McGill University; Physician to Montreal General Hospital.

The Indications against High Altitude in Phthisis.—The editor of the *Lancet* (Oct. 4th, 1890) draws attention to the difficult question of the selection of winter quarters, and not inopportunely recalls some of the pathological conditions which are a bar to the recommendation of the high altitude stations to the consumptive. It would be a great gain if no case were sent to the mountains except those for which experience warrants us in anticipating benefit, and if the notoriously unsuitable cases could be excluded. The first point to be considered is the extent of the pulmonary lesion. No case with extensive disease of the lungs is suitable for the mountains. The atmospheric conditions and mode of life at high altitudes are all of a nature to stimulate respiration and throw an additional strain upon the lungs. Life at high altitudes can operate beneficially only where the destruction of lung tissue is very limited in amount, and where there is still a sufficient amount of sound tissue to respond to the stimulus thrown upon it. If the lungs be extensively diseased, high altitude life will probably excite troublesome dyspnœa, prevent out-door exercise, and not only fail to retard the progress of the disease, but not even confer the palliation of symptoms which in advanced stages of phthisis may be expected from a soft and mild climate.

Certain constitutional states are contraindications to high altitudes in phthisis. Of these the most important are the rheumatic and gouty conditions, feebleness of the circulation,

bronchitis and emphysema, and lastly albuminuria. No case presenting any of these features can be sent to Davos, St. Moritz, Wiesen, Denver, the Adirondacks, or any other high altitude station with any reasonable prospect of benefit. A strong circulation is, *cæteris paribus*, an indication for the trial of a mountain climate. On the other hand a weak circulation, one of the clearest of contraindications. Organic heart disease will in nearly every case be a definite bar, and no difficulty will be felt in deciding upon such cases. Much greater difficulty will arise in connection with cases where there is no cardiac lesion, but only circulatory power. We are apt to take the tension of the pulse as a guide in such cases, but there is good reason for thinking that it is by no means a safe index. Much general physical vigour may apparently coexist with a low tension pulse. Our attention ought to be directed, not so much to the condition of arterial tension as to the obvious evidences of the efficiency or non-efficiency of the circulation, such as the condition of the extremities, proneness to congestions, &c.

It is not now generally believed that hæmorrhage is any contraindication in this matter, but there is more reason for thinking that certain types of dyspepsia—which can hardly be defined with exactness—are likely to preclude any benefit from a resort to the mountains. Insomnia, again, is a sign of doubtful indication. In some cases, it is distinctly aggravated, in others as distinctly benefitted by a residence at high levels. "After all deductions, we may yet affirm that for a certain limited number of cases of early and quiescent phthisis, where the circulatory and digestive systems are fairly efficient, and where there is no bronchial and renal complication, and no rheumatic and gouty history, the high altitudes possess peculiar advantages."

Aortic Regurgitation.

Pulsation in the Uvula.—In ordinary conditions of health there is no pulsation in the soft palate or uvula that is visible on simple inspection, so that when such a pulse is present it may, as a nearly constant rule, be taken as a sign of disease. In a recent memoir (*Charité Annelen*, xiv., 1889), Dr. F. Müller,

of Berlin, has reported a case in which he observed rhythmical pulsations of the soft palate. The case was one of aortic insufficiency. A slight attack of pharyngitis led to an inspection of the throat, when it was seen that with each carotid pulsation the tonsils and pillars of the fauces moved slightly towards the median line, while the soft palate and uvula were somewhat lowered, so that there was a rhythmical contraction of the faucial opening at the same time that there was an increase in the redness of the mucous membrane. Inspection of the throat after the inflammation had subsided showed the pulsation still present, though somewhat less pronounced. His attention having been thus called to this peculiar condition, Dr. Müller searched for it in six other cases of aortic insufficiency, and found it four times in a total of seven cases. In an article in the *Gazette Hebdomadaire de Médecine et de Chirurgie*, March 15, 1890, Dr. P. Merklen quotes these cases and refers to an observation of his own. The patient was a young man, who had a double mitral and aortic lesion, with marked hypertrophy of the auricle and left ventricle. The sublingual capillary pulse was distinct, and, in addition, the palatal pulse was very evident on inspection. This was more particularly marked in the uvula, which could be seen to swell synchronously with the carotid and radial pulses. Although, as Dr. Merklen remarks, this sign can have no great clinical value as an aid to diagnosis, it would, nevertheless, be interesting to learn with what constancy it is present in cases of aortic insufficiency, and whether the pulsation is ever visible in any other conditions. Müller never observed it in any other cases than those of aortic insufficiency, and Merklen has also examined many patients without this condition, but failed to find any pulsation. It is certainly not present in all cases of aortic insufficiency, for Müller looked for it in four such cases, but could not detect it. The palatal movements are not caused by transmission of the carotid beat, but are probably produced in the same way as the capillary pulse seen under the finger-nails in cases with similar cardiac lesions.*

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* The New York Medical Record, May 31st, 1890.

The Capillary Pulse.—Lazarus Barlow* deprecates the ordinary mode of testing for the existence of a capillary pulsation by reddening the forehead by friction, and advocates search for it under the nails, or still better upon the mucous membranes. He turns out the lower lip and presses a glass slide over it, when the pulsation if present is seen reddening and fading through the glass, Fifty cases of healthy hearts had no capillary pulsation. In 46 cases where capillary pulsation was present, 39 had some change in the second aortic sound; 6 showed capillary pulsation on one occasion and never subsequently; and in one case, where the pulsation was constantly present, no cardiac lesion could be discovered. Of these 39 cases where the second sound of the aorta was affected, 33 presented a diastolic murmur.

The Capillary Pulse and the Centripetal Venous Pulse.—Quincke† found that the capillary pulse could not be found under the finger in many cases owing to its lack of transparency. He therefore rubs the forehead with some hard, smooth body, as the lower end of the sthethoscope, until a red spot is produced by the paralytic dilation of the capillaries and smallest arteries. In this the systolic increase of the size of the redness can often be well observed. For the production of the pulse there should be the greatest possible difference between the arterial pressure during the systole and that during the cardiac diastole. The capillary pulse is best seen in aortic insufficiency, and depends on the amount of blood regurgitated as well as on the energy of the succeeding ventricular contraction. To permit of much aortic regurgitation, not only must there be extensive valvular insufficiency, but the ventricle must be able to contract; for if it be dilated and weakened, and unable to expel more than a portion of its contents, there is evidently not much room for regurgitation. Consequently, in disturbance of compensation in cases of aortic insufficiency, the characteristic peculiarity of the pulse often disappears, and it is only with return of ventricular strength that capillary pulse and the

* The Practitioner, March, 1890. Also in Sajous' Annual.

† Berliner Clin. Wochenschr., 1890, 265, from the Amer. Jour. Med. Science.

celerity of the arterial pulse can be discovered. The capillary pulse is not observed in every case of aortic insufficiency, and conversely it may be witnessed in other conditions also, wherever the *pulsus celer* is found, in anœmic and chlorotic conditions, and in many nervous and muscular alterations of the cardiac action. It may sometimes be seen in the everted under lip, or in pressing a plate of glass against the finger tip. It may even appear in the natural redness of the cheeks and in any localized area of inflammation of the skin. The other conditions being present, it is especially well seen in erysipelas ; pulsation of the retinal arteries is seen under the same circumstances as the capillary pulse. The conditions under which the centripetal venous pulse is produced are different. Quincke thinks it to be of rare occurrence. The chief conditions requisite for it occurrence are relaxation of the vessels, chiefly the arteries, but also of the capillaries and veins. This is especially common in certain stages of fever, as in sudden fall of temperature, accompanied by profuse sweat. Thus he has seen it in a number of cases of typhoid fever, as also in recurrent and intermittent fevers, pyæmia, polyarthritis rheumatica, pneumonia, phthisis and cholelithiasis. Nervous influences may join with the fever in producing it in such conditions as meningitis, spondylitis, encephalomacia, and injuries of the cervical cord. He has also seen the venous pulse in afebrile conditions, as chlorosis and anæmia, and even in healthy persons whose peripheral vessels have been relaxed by the summer heat. It is witnessed in the veins of the forearm and back of the hand. Only once has he seen it on the dorsum of the foot. Besides the relaxation of the vessels, a number of other conditions seem necessary for the production of the phenomenon ; such as thinness of the skin, a sufficiently powerful action of the heart, a certain degree of fulness of the veins dependent on the relaxation of the vessel walls and the position of the arm at the time of examination. A slight change in the position of the member may be sufficient to cause the pulse to disappear. One must not expect to find the capillary pulse in every case of centripetal venous pulse ; on the contrary, their combination is exceptional. The condition most

favourable to the production of venous pulse, the condition which develops it to the best advantage is the combination of aortic insufficiency with relaxation of the vessels. Arterio-sclerosis, also, may favor its occurrence by transmitting a powerful pulse-wave into the smallest arteries.

Early Development of Spinal Syphilis.

Gibert and Lion have recently published in the *Archives Générales de Médecine* an essay on the early manifestation of syphilis of the spine. Fifty-six cases have been collected in which symptoms were noted within two years of the primary infection. One case is reported of a man who shewed spinal symptoms in the tenth month after infection. Of the 56 cases, in 44 there were no cerebral syphilitic manifestations. These manifestations are twice as frequent in the first year as in the second, and particularly frequent in the second quarter, that is, about the sixth month of syphilis. Syphilitic spinal manifestations are chiefly to be found in cases which have not been well treated in the early stage of the disease, in those in which the eruption has been copious and obstinate, and those in which the tertiary symptoms appear at the time when secondary symptoms are due. They are found almost exclusively amongst men. The initial symptom is usually pain in the spine extending the whole length of the column. In the case specially commented upon by M. Gibert, the patient experienced at first a sense of fatigue in the back which was soon followed by paralysis of the bladder, and in forty-eight hours all the other symptoms presented themselves, viz, paraplegia, loss of reflexes, paralysis of the rectum, loss of sensibility to heat, cold, pain, contact, tickling. Vasomotor disturbances manifested themselves by a semi-erection of the penis, œdema of the lower extremities, and by the suppression of sweating in the paralysed parts.

Rheumatism and Gout.

Painless Gout.—There is a valuable store of medical observations in Mr. Jonathan Hutchinson's Archives of Surgery, which every one would be the better of studying, and of the many very

good articles that on *Rheumatism and Gout* is specially worthy of admiration. Pain, according to Mr. Hutchinson, is not essential to gouty inflammation. When it affects skin and cellular tissue chiefly, then it may easily happen that there is little or no pain. In many cases of even acute gouty inflammation, redness and œdema are the signs and pain is almost wholly wanting. In such cases the diagnosis of erysipelas might very likely be made, as "when, as I have sometime seen, the œdema spreads up the limb this suggestion might appear to obtain an item of important support."

On the Inheritance of Gout as the Predisponent of Gonorrhœal Rheumatism.—Mr. Hutchinson has long held that the predisposing cause of what is called gonorrhœal rheumatism is an inheritance of gout. In case after case, he has found this history, and few indeed have been the exceptions. Mr. Hutchinson gives the details of a case bearing out the correctness of his opinion.

Arthritic Changes Induced by Injury.—Mr. Hutchinson relates an interesting example of the importance of the family history, and of the manner in which rheumatic gout may be localized by injury. A young gentleman, aged 20, suffered from pain and stiffness in the wrist and elbow, the result of a fall from his bicycle some months before. His grandfather had suffered severely from gout, as also other members of the family. Mr. Hutchinson having expressed his opinion that it was this inherited tendency which was the cause of the persistence of the swelling, his mother remarked it was wished that he should see the sister also. In her case, great enlargement of the carpo-metacarpal joint of the right thumb had resulted from a sprain, and there was the further history that she had formerly been laid up for a year with chronic inflammation of one knee in consequence of a sprain. She was a florid girl of twenty, and had often suffered from rheumatism. Both she and her brother were accustomed to take wine and beer moderately.

Alterations of the Cardiac Muscle in Diphtheria.

Schlem contributes to the August number of *Virchow's*

Archives an interesting account of his examination of the hearts of many patients who had died in a recent epidemic of diphtheria in Göttingen, the investigation not being limited, as were those of previous observers, merely to cases where heart symptoms were present, but including all fatal cases of diphtheria occurring within a definite period. This systematic examination of a number of cases afforded the author an opportunity of estimating the frequency with which the heart is attacked in diphtheria as well as examining into its intensity and nature. Thirteen fatal cases of diphtheria are reported, and the results are as follows:—Fatty and granular degeneration of muscle fibres, slight hyaline degeneration and atrophy. The connective tissues appeared frequently somewhat rich in cells, and in certain cases the heart muscle was dotted with extravasated blood. Fatty and granular degeneration was found in every case, in some it was very slight, especially when the false membrane was the cause of death ; in others the morbid change was extensive so that many fibres were entirely replaced by fat cells, affording an explanation of the cardiac weakness observed during life. Age seems to exert no special influence upon the intensity of the heart affection. On the other hand, the duration of the illness seems to be an important matter. Of the cases in which an extreme degree of degeneration was found, one lasted 18 days, two cases 10 days, and in a third instance the exact duration could not be determined, but it was probably nearly as long. In the cases in which cardiac degeneration was not so marked, the duration of the fatal illness was invariably much shorter, and the least degree of degeneration was found in those cases where the larynx was attacked and the patient died at a very early stage of the disease. The changes in the heart did not bear any relation to the changes in the lungs. In many cases in which there was more or less pronounced broncho-pneumonia there was little change in the heart, while in others there was no pneumonia but a considerable degree of muscular degeneration of the heart. In but one case could a proliferation of nuclei in the intermuscular connective tissue be found, and this lay under the pericardium, which at this spot

appeared on section to be undergoing the same change. In many cases the intermuscular and perivascular connective tissue was to some extent infiltrated with nuclei, but the author could not determine whether this is not a normal condition in children. Of the fatty degeneration fever cannot be regarded as the cause, since in many cases the rise of temperature was not great, and in some of the cases most affected, the normal point was never passed. The changes in question partake of the nature of the condition called by Orth parenchymatous or degenerative myocarditis, and which is frequently met in many severe diseases of an infectious nature.

Diabetic Paraplegia.*

In a recent lecture by Prof. Charcot on organic or dynamic affections of the lower limbs, the subject of diabetic paraplegia, analogous to alcoholic paraplegia, came under discussion. In 1880 Jules Worms wrote of symmetrical neuralgias in diabetes (cf Buzzard, Drasche Ziemssen). The neuralgias were not always bilateral and were occasionally fulgurating (Bernard et Féré). Sometimes there were formications, hyperæsthesiæ and dysæsthesiæ, as in ataxia and even absence of knee jerk. Absence of knee jerks in grave cases of diabetes, not necessarily grave because a large amount of sugar is excreted, is evidently due to peripheral neuritis, the spinal cord being found intact. In some cases locomotor ataxia is simulated by this absence, the lightning pains and other sensory troubles and the ataxic gait. But in both the diabetic and the alcoholic kind of ataxia, the gait is not really that of tabes—the muscular paralysis predominating in the extensors of the foot. In fact in all the pseudo-tabes alcoholic, diabetic, saturnine, beri-beri and arsenical, we see the "steppage," not the true ataxic walk. The front part of the foot falls, and the patient is obliged to step higher than usual to prevent the toes from catching the ground. The paralysed muscles show the electrical reaction of degeneration. Meanwhile in all the above, the spinal cord shows no coarse alteration; the posterior columns in particular are quite free.

* The London Medical Record, July 20th, 1890.

Diabetic paraplegia is probably due to an auto-intoxication. There is not the painfulness on pressure of the limb found in the alcoholic variety, but the feet fall even when the patient is seated. On the whole the case exhibited bore the closest similarity to alcoholic, while there was no alcoholism about it. Of course a true tabes may co-exist with diabetic paraplegia; the symptoms would then differ. The diabetes might appear late and would then be due to extension of the tabetic lesion to the 4th ventricle; these cases are rare. Or true diabetes may occur during tabes or precede it, independently, as a coincidence, but not a fortuitous coincidence for the arthritic and neuropathic families of diseases are closely related.

Uræmic Stomatitis.

A few years ago I had a very interesting case of interstitial nephritis in my wards of the Montreal General Hospital, which was made the subject of a clinical lecture (*Medical News*, Jan. 15, '87). This patient presented one by one the symptoms of the lesions which we group under the comprehensive title of interstitial nephritis. She had recurrent attacks of epistaxis, hemiplegia, a large heart, œdema of lung, albuminuria, and casts. During the course of this long illness an attack of stomatitis occurred which I described to the class in these words: "During the summer of 1885, the progress of the disease (the interstitial nephritis) was stationary, but in the early autumn severe stomatitis set in, accompanied by such depression of the general strength that a fatal result from exhaustion at one time seemed imminent. There was extensive ulceration of the mucous membrane of the mouth, the gums receded from the teeth, leaving the teeth loose, so that some of them had to be removed. A large ulcer threatened to destroy the floor of the mouth and gave rise to several severe hæmorrhages. This is an uncommon affection, and so far as my knowledge goes has no connection with the renal disease." I was decidedly wrong in that last statement, for it appears that a connection has been traced between uræmia and stomatitis, an interesting essay on the subject having appeard in the *Archives Générales de Médecine*

(Oct.-Dec., 1889). M. Barić, the author, describes under the name Uræmic Stomatitis those bucco-pharyngeal determinations which form a part of the gastro-intestinal manifestions of uræmia. The parts affected are the mouth, the rima glottidis, and the pharynx. The two forms under which uræmia manifests itself in this way are (1) pultaceous stomatitis, (2) ulcerative stomatitis. In the pultaceous form the tongue is covered with a grayish coating, thick and tenacious, but not adherent to subjacent mucous membrane which may extend over the inside of the cheeks, the gums and even the pharynx. In the ulcerative form, the ulcerations are found upon the gums, the inside of the cheeks and the lips. The accompanying salivation is excessive. In one of the cases a very large proportion of urea was found in the saliva. Stomatitis is followed by a depressed condition of the system. After ulcerative stomatitis the prognosis is specially bad. The ulcers may extend, become deep and form extensive sloughs, but they may heal and leave behind them cicatrices of various forms. Uræmic stomatitis is caused by the elimination of urinary poisons by the salivary glands, a dirty state of the mouth favours its occurrence.

In connection with the subject of uræmic stomatitis it is interesting to note that in an essay on Ulcerative Stomatitis by *Simanovsky* which is reproduced in abstract by the *Medical News* of September 6th, 1890, eight cases of the disease were described, and in one of three cases in which the urine was examined, albumen was discovered.

The Connection between Mental Symptoms and Cardiac Disease.

The editors of the *Boston Medical and Surgical Journal* present their readers (Vol. cxxiii, No. 5) with an admirable synopsis of the literature of this important subject. Nasse in 1818 first wrote of cardiac insanity as a special psychosis. Numerous treatises have since appeared. Sufferers from heart disease occasionally present peculiar mental symptoms. They are emotional, irritable, peevish, get angry at the least trifle, while at the same time, possessing great mental and bodily activity.

These psychical peculiarities do not amount to mental alienation, but they constitute a tendency of mind on which insanity may engraft itself. The two fundamental conditions necessary to constitute cardiac insanity are firstly a lesion of the heart, then a particular disposition of the cerebrum. It is important to remember that the insanity breaks out generally during an exacerbation of the cardiac symptoms. Mitral affections are the most influential in bringing on this psychosis; next in order come the ventricular hypertrophies, and lastly, aortic insufficiency, a lesion which is particularly prone to cause anæmia of the bulb, and give rise to the anguish and dyspnœa so characteristic of Corrigan's disease. We cannot as yet connect special forms of insanity with particular lesions, for patients may be affected with all forms of cardiopathy without mental alienation, while the great majority of the mentally unsound have no lesion of the heart whatever. Melancholia more frequently coincides with heart disease than any other psychosis. There exists a cardiac lypemania accompanied with a restlessness and an agitation which bears a strong resemblance to "anxious melancholia" that is, a delirium with predominance of sad ideas, and with an exaggerated tendency to noisy lamentation and an irresistable tendency to continued movement. Burman considers hypochondriac melancholia as the type of cardiac insanity; to this he joins the delirium of suspicion, and a particular mental state in which the subjects are at once impulsive and depressed. It has been remarked that all the victims of cardiac insanity are extremely prone to suicide, and that the morbid impulse is especially apt to manifest itself on the occasion of an aggravation of the circulatory troubles. The delirium is peculiarly a delirium of the night time, as Corvisart has remarked. It has, moreover, been noted that the supervention of albuminuria is one of the most important factors in the production of the delirium. A cardiac patient in the full possession of his reason will show signs of mental derangement, will have delirium, hallucination, morbid impulses as soon as the least cloudiness of albumen appears in his urine. This circumstance suggest the possibility of the delirium being uræmic in these cases. The one feature which

soonest attracts attention in the evolution of cardiac insanity is the intermittent march of this psychosis ; it manifests itself paroxysmally, it accessions being habitually followed by remissions supervening under the influence of rest and treatment. In the treatment of this kind of insanity, great reliance must be placed on the heart tonics, especially on digitalis, frequently administered in small doses ; it has been found that large doses rather aggravate than arrest the delirium. Bull speaks highly of the utility of hypodermic injections of sparteine and morphine, which have a very rapid action in arousing and sustaining a fatigued and flagging heart. The sedative action of the alkaline bromides on the nervous system constitutes them a precious auxiliary. Repose and isolation are indispensable ; it will often be necessary to send the patient to a sanitarium, or even to an asylum ; sometimes a sea voyage will give just the rest and freedom from care and business that is needed.

QUARTERLY RETROSPECT OF GYNÆCOLOGY.

By T. Johnson-Alloway, M.D.,
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Inflammation of the Ovaries.—In the *Annales de Gynécologie et d' Obstetrique* (June, 1890) Sloviansky expresses essentially the same views as previously on the subject of chronic oöphoritis. Localized pain is the most prominent symptoms. In the cirrhotic form this is not increased by deep pressure, and is due to compression of the terminal nerve-fibre by the cicatricial tissue. Hyperæsthesia of the skin supplied by the genito-crural nerve is often noted, especially just before menstruation. The character of the menstrual flow depends upon the amount of ovarian tissues affected. Menorrhagia accompanies hyperplastic oöphoritis associated with endometritis, reflected pain through the 6th or 7th intercostal nerves is very common on the side the ovary is affected. Migraine, palpitation, reflex cough and irritability are all well recognized symptoms.

Statistics of Ovariotomy.—Terrillon (*Le Mercredi Médical*, July 2, 1890) reports two hundred cases of ovariotomy, with twelve deaths in the first hundred and four in the second, three

of the latter being due to shock and only one to sepsis. The writer agues in favor of sparing the remaining ovary when it is not visibly diseased, since nine of the patients thus treated subsequently bore children.

Vaginal Hysterectomy.—Ott (*Frauenärzt*, June, 1890) reports eleven cases in which total exterpation was attempted, the operation being abandoned in three cases on account of the extension of the disease to the peri-uterine tissues. All the other eight patients recovered, but six had a recurrence within less than a year.

Vaginal Extirpation of the Uterus.—Malan (*British Gynecological Journal*, May, 1890) believes that the operation should be judged by the results obtained by the best operators. Leopold's statistics show only four deaths in eighty cases, or 5 per cent., and perhaps even this death-rate may be diminished.

Forty-two cases had been operated upon more than two years before, of whom twenty-seven, or 64½ per cent., were still free from recurrence. The writer opposes high amputation, first because the mortality is greater [?] than after extirpation, and secondly, because it is impossible to say beforehand how high the disease extends. Infiltration of the broad ligaments is not in itself a contra-indication to the radical operation, since it may be purely inflammatory and not cancerous. "As long as the uterus can be drawn down, so long is the operation allowable." The condition of the patients with recurrence of the disease after hysterectomy is not materially worse and does not constitute an argument against the operation in suitable cases.

The Surgical Treatment of Cancer of the Uterus.—Petrow's thesis on this subject (abstracted in *Frauenärzt* for June, 1890) is based upon observations made in Lebedew's clinic. The latter performed twelve vaginal hysterectomies with two deaths; two patients had a recurrence within less than a year and only one was free from disease at the end of three years. Of seven patients upon whom high amputation was done, two had a recurrence within eight months, one was healthy at the end of two and one-half years, and four had not reported.

The writer collected from all sources 599 cases of total extir-

pation and 417 of high ampuptation, the immediate mortality in the first series being 18.76 per cent., in the second 8.7 per cent. In 21 per cent. of the cases of total extirpation the average freedom from recurrence was only eight months, although the subsequent history of nearly one-third of the patients was not obtained. Over one half of the cases of high amputation were lost sight of, but there was a return of the disease in 38 per cent. of the others. From these statistics the writer argues in favor of vaginal hysterectomy. [As the author himself admits these statistics are unreliable, especially as regards the recurrence after high amputation. There is, however, no question as to the relative mortality following the operations.]

Jessett (*British Gynecological Journal*, May, 1890), as the result of his long experience at the Brompton Cancer Hospital arrives at the following conclusions:—(1) When the disease is confined to the portio vaginalis, amputation of the cervix is the operation to be performed, the scissors, rather than the cautery or écraseur, being preferrable. (2) Caustics are "unreliable, and, indeed, in many cases, harmful." (3) If the disease does not extend beyond the os internum, conical amputation should be practised; but if it is found to extend higher, the entire uterus may be extirpated. (4) If the disease is limited to the corpus uteri and is recognized early, vaginal hysterectomy is the only operation to be done. (5) "No drugs administered internally have any effect whatever in arresting the disease." Appended to the paper is a table showing the results in eight cases of high amputation, but both these statistics and those of the writer in vaginal hysterectomy are of little value except as they present the immediate results of both operations, which were good, the mortality being *nil*.

The limits of Vaginal Hysterectomy for Cancer of the Uterus.—Coe (*Am Journ. of Obstetrics*, June, 1890), from a study of nineteen cases of vaginal hysterectomy, arrives at the conclusion that when performed in cases of cancer of the cervix the operation can seldom be regarded as a curative one, though the immediate mortality may, in the hands of experienced operators, be reduced to six or eight per cent. He would limit total extir-

pation to cases of malignant disease of the corpus uteri in which the condition is recognized early, while the uterus is freely moveable, the glands and perimetric tissues are not involved, and the patient's general health is such as to offer a fair prospect of recovery from the operation and the enjoyment of several years of life. But under these circumstances the surgeon may be disappointed by an early recurrence.

In a paper on *Menstration and Removal of both Ovaries*, Dr. J. ENGELMANN of St. Louis draws the following conclusions :— In considering the question of the cause of the persistence of menstruation after (double ovariotomy) the removal of both ovaries, we must bear in mind the more important of the reasons assigned : (1) Habit ; (2) the presence of a third ovary ; (3) Remnants of ovarian tissue left *in situ*. Some have ascribed the cause of persistent menstruation to habit—an explanation which I do not accept, and which cannot be admitted even when it is a regularly recurring and persistent flow with the undoubted characteristics of menstruation. Morbid activity or irritation of the spinal or ganglionic centres or of the terminal nerves may serve to explain recurrences of uterine hæmorrhage for a time, but habit is a term which must be excluded from any scientific discussion of the question. We do know that uterine hæmorrhage frequently occurs soon after operations on the pelvic viscera, especially after laparotomy, evidently due to the congestion caused by this disturbance of the circulation, and, if the spermatic and other supplying vessels are cut, by the increased flow to the remaining arteries, especially the uterine. We also know that bleeding, simulating menstruation, occurs under various conditions without ovarian activity ; thus from the congested or subinvoluted uterus during child-bed ; in old age, if the tissues are relaxed, or if the endometrium is in a state favoring hæmorrhage, with an endometritis polyposa or hæmorrhagica. In many of these cases in which the appendages are removed, or ovariotomy is performoed, a diseased, congested, or enlarged uterus exists, and by reason of the ligation of numerous vessels the flow of blood through the uterine artery is increased, and in such cases in the already congested organ the habitual influence of

the menstrual wave, of the uterine flood, in obedience to the irritation arising from the nerve stump or the spinal and ganglionic centres, may suffice to cause an increased pressure and a flow of blood at intervals, especially at the times when menstruation should have occurred, but this will never persist for any length of time. It is in this class of cases, with a uterine status favoring hæmorrhage, that the habit, the disappearing wave of the uterine flood, or, more correctly speaking, the influence exerted by the ganglia and nerve stumps, will lead to the semblance of menstruation, but never to a normal and persistently recurring flow. It is now well known that a third ovary does occur, although only a myth until 1863. One such case, and another of an accessory ovary, is pictured by Winckel. Olshausen, Klebs and others have observed and published isolated cases, but notwithstanding all the numerous laparotomies of late years by competent observers, not one has met with a third ovary except Olshausen in the removal of an ovarian cystoma. Continuance of menstruation after removal of both ovaries has been so frequently reported and the presence of a third ovary so rarely that, *à priori*, we must conclude that an additional remaining ovary cannot be accepted as an explanation for this phenomenon. Whilst the present status of our anatomical and physiological knowledge will not admit of either of the above explanations, it is fully in accord with the facts observed in the cases reported, which conclusively prove that the continuance of menstruation, undoubted menstruation, regular and persistent, is due to the presence of ovarian tissue, however small in quantity and whatever it may have left. From the history and examination in my own cases and in that of Prof. Schatz, we may safely draw the following *physiological conclusions*, which are corroborated by numerous cases of oöphorectomy and of double ovariotomy, now observed, the histories of which have been recorded for a sufficient length of time after recovery from the operation :—

1. That the continuance of *menstruation* after removal of both ovaries is due to remnants of ovarian stroma left *in situ*.

2. That particles of ovarian tissue, however small, which

remain after the removal of the greater portion of the organ, whether or not the Fallopian tube be preserved, *may* retain their activity and continue the functions of the entire organ, and from this we infer that menstruation is more or less intimately associated with ovulation, and that the menstrual condition indicates the ovarian status, provided the uterine tissues be normal in character.

3. That even elongated pedicles may contain ovarian stroma in which the functional activity of the organ may be continued.

4. That remnants of ovarian stroma do *not necessarily* preserve their vitality and functional activity.

5. That the ovary is an essential factor in the functional life of woman, and that menstruation is inseparable from ovarian activity, if not ovulation.

The deductions of practical value to the operator are as follows :

1st. If menstruation is to be checked and the change of life produced, it is requisite that every particle of ovarian stroma shall be removed, if the result desired is to be expected with certainty.

2nd. If shrinkage of fibroids, limitation of hæmorrhage, or cessation of annoying symptoms is to be accomplished with the greatest possible certainty, both ovaries must be *completely* removed.

3rd. In the performance of double ovariotomy in women not yet beyond the climacteric, and not suffering from uterine reflexes, such healthy ovarian tissues as may exist should be spared in order that functional activity may not be impaired.

The Sharp Curette.—Dr. H. Marion Sims in reporting some cases in the *Annals of Gynecology*, makes the following remarks on curetting the uterus. He says :—I wish, in this connection, to emphatically state my preference for the Sims, or sharp curette, as compared with the Thomas, or dull curette. I have used both of these instruments, and it has been my experience that I can certainly remove more effectually and more thoroughly any growth or fungoid degeneration of the utricular glands with the sharp curette, and I have seen the dull curette fail oompletely

to give relief in a number of cases. I have even had cases in which the operation had to be done finally with the sharp curette in order to remove all the pathological conditions that existed within the uterus. It has been stated by many operators that the sharp curette is a dangerous instrument. That I do not believe, for I have used the instrument now continually for nearly twenty years, and I have yet to see the first case of accident follow its use. Like any sharp instrument it is a valuable one in the hands of those who understand its use, and, probably for the same reason, it may be called a dangerous instrument in reckless hands. I think, if you follow out my instructions given for the use of the sharp curette, you will find that on all occasions you will meet with just as much success and just as little danger as I have experienced in its use. To begin with, you should never curette a patient in your office and then allow her to walk or ride home. If the curette operation is to be performed, I make it a rule to go to the patient's house, or have her go into a hospital or boarding-house or hotel, if she be not a resident of the city, and there I perform the operation carefully, thoroughly and without undue haste. In using the sharp curette, you will always find that when you are curetting over a diseased area, the instrument will emit no sound whatever; it will, in fact, be perfectly noiseless; but as soon as your instrument has touched healthy tissue you will get that peculiar rasping sound similar to the sound produced if the curette be drawn over the palm of the hand. The curette should be carried around thoroughly over the surface of the tissues on both sides, and antero-posteriorly as well, and after you are satisfied that you have thoroughly and efficiently curetted the whole interior of the organ, then the uterus should be well washed out with a solution of about 5 per cent of carbolic acid and hot water at about 100° to 105° F. Following this, I have made it an invariable rule for years in my practice to inject into the uterine cavity about twenty or thirthy minims of the tincture of iodine, care being taken to inject the iodine as the syringe is being withdrawn from the uterus, and not while it rests against the fundus or near it. This, together with the washing out, causes a prompt closing of

any bleeding surfaces. The patient is then put to bed and made to remain there anywhere from three to five days, according to the manner in which the case progresses.

Hydrosalpinx and Pyosalpinx.—Dr. Landau (*Nouv. Arch. d' Obstétrique et de Gynécologie*, 1890) read in the Section of Obstetrics and Gynæcology, at the Berlin meeting of the International Medical Congress, an excellent paper on the treatment of fluid collections in the tubes. He considers that the diagnosis of a tubal sac is not necessarily an indication for its extirpation. Since such an operation involves many dangers, even after recovery from its immediate effects, the precise indications which justify it must be accurately determined. Dr. Landau first discusses hydrosalpinx. That disease may undergo spontaneous cure; cases of intermittent hydrosalpingitis indicate how cure can take place. The methods of effecting cure without mutilation are "orthopædic" and surgical. The "orthopædic" methods are rectification of a displaced uterus, massage, catheterisation of the Fallopian tube, and dilatation of the uterus. Rectification of a retroversion or other displacement favours the escape of the contents of the dilated tube, as an intermittent hydrosalpingitis. Massage, properly performed, has the same favorable effect. This practice also causes breaking down of adhesions of the tube, whether with other parts of itself or with the uterous and other adjacent structures. The tube is thus set free, and contractions of its muscular coat excited. Dr. Landau rejects catheterisation of the tubes. An elastic sound cannot be introduced in the uterine orifice of the tube; a rigid instrument is dangerous Dilatation of the uterus is difficult and very uncertain. The process involves manipulation which may rupture a supurating tube, or cause a simple hydrosalpinx to suppurate. The surgical proceedings, short of salpingotomy or castration, are puncture by the vagina or incision. When puncture of the dilated tube through the vagina is practised strict antiseptic precaution are called for. By pressure on the abdominal walls the tumour is pushed well downwards. A special trocar, guided by the finger, is pushed into the dilated tube without the aid of the speculum, and without any fixing of the uterus

by forceps, etc. Great care must be taken to avoid the entrance of air, and aspiration should never be attempted. With these precautions the neighbouring organs and the vessels are not damaged. The above proceeding Dr. Landau terms "palpatory puncture." It may prove sufficient by allowing contraction of the muscular coat, its effects then resembling the phenomenon which occur when the membranes are punctured in pregnancy. Should the flaccid tube fill once more after puncture the process may be repeated, the cavity being washed out with a three per cent. solution of carbolic acid, or tincture of iodine may be injected into the empty sac. Leaving a cannula in the sac is not advisable. In obstinate cases of refilling, incision may be performed. In a long series of cases where Dr. Leopold has employed simple puncture of the tube, he has opened by mistake ovarian, parovarian, and hydatid cysts and tubal sacs, without fatal results.

A new method of performing Hysteropexy.—Dr. Laroyenne performs hysteropexy in the following manner: A sound is passed into the uterus, and that organ is pushed up and pressed against the abdominal wall. An incision, about three inches in length, is made through the median line, well upon the fundus and anterior aspect of the uterus; the peritoneum is opened. A long needle, mounted on a handle, is passed through the muscular tissues of the abdominal wall, and through the peritoneum half an inch from its cut border, and is then made to transfix half an inch of the anterior aspect of the uterus at the level of the fundus, passing the peritoneum and muscular tissue of the abdominal wall on the side opposite the point of introduction. The needle is left in place, and two or three more needles are passed, in the same manner, lower down at the intervals of half an inch. The needles are then threaded with catgut. The uppermost suture is tied after the withdrawal of its needle. Then the next needle is withdrawn and its catgut suture tied. The process is repeated with the remaining needles and sutures. In this manner the uterus is kept steadily forwards till secured by all the sutures. The superficial wound is closed, and a plug of iodoform gauze is passed into the vagina, serving as a provi-

sional pessary. The uterus should not be pulled upwards with the hand; M. Laroynne's proceeding avoids this objectionable practice. The peritoneum must be opened; Caneva's extra-peritoneal proceeding been performed with safety and precision, but the omentum is often in the way, and an intestinal adhesion to the front of the uterus existed in one case.—*Progrés Médical*, July, 1890.

Sloughing Fibro-myoma of Uterus.—Dr. Cheeseman reports a case of a patient aged 49, mother of 3 children, who was the subject of a very large myoma-uteri. After a severe flooding, which was treated by the tamponade, her temperature began to rise and the vaginal discharge became offensive. The temperature continued to remain between 103° and 104° F.; the discharge, in spite of douches, becoming more abundant and offensive. Ergot was now administered with the result of causing large masses of necrotic tissue being expelled, the temperature keeping high and the critical condition of the patient being maintained. After about a month of this state of things being maintained, Dr. Cheeseman dilated the cervix under ether to explore the cavity of the uterus. The cavity was found enlarged and the finger detected a circular opening in the roof about the size of a fifty-cent piece. Within the rim of this opening the finger could be swept round between the body of the tumour and the uterine wall, but no evidence of further separation could be made out. On account of the patient's condition this necrosing mass was not disturbed. Under the use of ergot, however, masses of the tumor were expelled daily. The patient was now rapidly losing ground from the profound septic condition which existed. During the following month much of the growth had sloughed out, ending in the expulsion of one large ragged slough from the vagina. After this the discharge became less abundant and offensive, and she gradually recovered in the course of another month. There could now be no trace found of the large abdominal tumour, and the uterus returned to its normal size.

Gynæcology in its Relations to Insanity.—Thos. Savage, M.D., in *British Med. Jour.*, says:—Among the causes of

insanity in women, heredity, intemperance, and the vicissitudes of female life are said to be the most frequent ; and it has long occurred to me, as I know it has to others, that in regard to the latter element as a cause, much good might result if every case in which there was the least doubt was thoroughly overhauled and investigated by an experienced gynæcologist. Every one knows that occasionally, although rarely, a case of insanity has been cured by the application of a properly adjusted pessary to a displaced uterus. Then, in regard to the influence upon the mental state which is produced by the presence or the absence of the ovaries, little is known. Observation on this point has not been sufficiently extended or pursued. We do know that sometimes the operation for the removal of both ovaries is followed by mental derangement; but we cannot at present say why it is so. In my own practice I find that, excluding cases of supra-vaginal hysterectomy, I have performed the operation for various abnormal conditions, of removal of the appendages on both sides in 500 cases ; and that the operation has been followed by insanity in four instances. Of these, three recovered, and one committed suicide. I have never seen insanity follow the removal of one ovary alone, or any other pelvic operation. The insanity of the climacteric period, and of the puerperal period, may or may not be dependent on some occult influence seated in the ovaries, the exact nature of which, if, or when, it exists, has yet to be investigated. Then, the mental and hysterical state of many unmarried women of thirty years of age and upwards is one which may well engage the careful attention of gynæcologists, especially of those who have access to fields where such cases may be seen and studied in numbers and variety.

Massage.—Dr Holtzapfel (*Wiener medizinische Blätter*, October 2nd) publishes a series of cases in which massage proved useful in certain forms of pelvic disease. Most of the cases were in Professor Fruend's wards in a Strassburg hospital. Massage must not be attempted in the subjects of malignant new growths, acute and subacute inflammatory disorders, abscesses, pregnancy tubercle, hæmophilia, and diabetes. Three

classes of cases have been more or less successfully treated by massage. First, it has been used to promote absorption of extravasated blood and inflammatory exudations. In every instance of the kind there is considerable danger in practising massage; Dr. Holtzapfel therefore rejected the practice in these cases. Secondly, massage has been employed for the stretching of bands of adhesion and cicatricial tissue, as in old cases of perimetritis and parametritis. In such cases the practice has proved satisfactory. The dragging of the uterus backwards through adhesions or cicatricial shortening of its ligaments can often be remedied by massage, which has likewise given excellent results in parametritis chronica atrophicans, a hitherto somewhat intractable disease. The third class of cases in which massage has been tried with success includes all in which relaxation of the tissues has caused prolapse of the uterus, ovaries, or vagina. Massage appears to restore to the relaxed ligaments and other structures their normal elasticity, also effecting beneficially their innervation and blood supply. The results, according to Dr. Holtzapfel, are more satisfactory than those which follow complicated plastic operations for the relief of the same conditions.

Rupture of the Uterus cured without Operation.—(K. A. Hersfedd, M. D., in *London Med. Recorder*).—This case deserves attention, as it shows, like the published cases of Tiskacek and Leopold, that laparotomy is only required in special cases of rupture of the uterus. The patient was a multipara, amniotic fluid had escaped three days previously. The fœtus took a transverse position; the medical attendant tried turning unsuccessfully, and then decapitating, also unsuccessfully. The woman was then removed to hospitol in a collapsed condition, and examination showed all the signs of rupture of the uterus. The fœtus was in the second shoulder position, the left hand in the vagina, and the shoulder wedged in the pelvis. The rupture was on the left of the cervix, three centimètres from the internal os, and permitted the introduction of the whole hand into a large cavity filled with clots, and covered by the peritoneum of the left parametrium. Decapitation was at once performed, and removal of the fœtus and placenta. The rupture

was packed with iodoform gauze, also the uterine cavity, and a good bandage was applied externally. The patient did well On the sixth day, the temperature was only 38.2; on this day the dressings were removed. Some ulcerations of the vagina were touched with iodine tincture, and the vagina washed out with thymol solution, after which she made a good recovery.

Abdominal Sections by Prof. Martin.—(*Brit. Med. Jour.*) —On Wednesday morning, Aug. 6, Dr. Martin performed three abdominal sections at his private hospital in the Elsasserstrasse before a company of distinguished foreign operators. Each patient was chloroformed in her ward, then carried upon a couch with wheels to a room where the abdomen was thoroughly washed with sublimate, the pubis shaved, and the urine drawn off. The visitors, at the request of the operator, entered the operating theatre divested of their coats and waistcoats. The operator and his assistants were in yet more complete undress uniform. The patient, when brought into the theatre, underwent a fresh washing, the juice of a lemon being lastly squeezed over the abdominal integuments. The operator sat between the patient's thighs; the chief assistant—also sitting—was placed to the patient's left. In all three cases the operation was performed with great rapidity, and the abdominal incision was made very long, almost reaching the umbilicus, although in no case was a large tumor present. The wound was also closed quickly by means of stout catgut sutures, not placed closely together. In the second case a suppurating tube was removed from the right side. In the third an intra-ligamentary ovarian cyst was enucleated. The first operation was of great interest. An interstitial myoma of moderate size was present. The uterus and its appendages were drawn out of the wound, and the vessels of the broad ligament temporarily secured by means of large pressure forceps. Then a vertical incision was made, extending down the back and front of the uterus, passing over the fundus. The myoma was next enucleated. The capsule was treated after Dr. Martin's special method; none of its substance was cut away, but its raw surfaces were united by deep, and its cut edges by superficial, catgut sutures. The forceps being

removed, the uterus and appendages were then replaced in the pelvis. In none of the cases was flushing or drainage employed. The instruments were immersed in a 2 per cent solution of carbolic acid. For the washing of the patients and the operator and assistants a 1-1000 solution of sublimate was employed. The spray was not used. Dr. Martin's hospital is a model of elegance, comfort and cleanliness.

Taberculous Peritonitis.—M. MAURANGE (*Nouv. Arch. d' Obstétrique et de Gynéc.*, September, 1890) has collected statistics of seventy-one cases in which abdominal section had been performed for tuberculous peritonitis ; 83 per cent. were operative successes, and of these about one half were doing well one year after the operation. In many cases which afterwards died of other tubercular affections the peritoneal lesions were found completely cured. The precise way in which cure of the local affection is brought about by adominal section is not clear ; many theories have been advanced. M. Maurange maintains that the operation simply places the patient in a condition favourable for cure by unburdening the peritoneal cavity of its ascitic effusion, which is, moreover, a true cultivating fluid. The proceeding also insures antisepsis. Abdominal section is not only advisable in cases where a localised tuberculous area exists, but also in cases where the patient's general condition grows worse, and where the disease spreads whether ascites or not. Some surgeons are content to open the peritoneal cavity ; others flush it with antiseptic lotions, dress it with iodoform, or drain. M. Maurange has seen good results follow a less extreme practice than abdominal section. The ascitic fluid is removed by aspiration ; antiseptic washing with subsequent evacuation of the fluid follows the aspiration, and lastly variable quantities of a mixture are injected into the peritoneum. This mixture consists of 4 grammes of iodoform dissolved in 100 grammes of liquid oil of vaseline. This injection can be safely repeated, considering the small proportion of the iodoform and the weak absorbing power of the diseased peritoneum.

The Treatment of Endocervicitis.—DR. STRATZ, in *Zeit. für Geburtshülfe und Gyn.*, made a series of observations to test

the value of the application of chloride of zinc and lactic acid. He found the former was the better of the two applications. Scarcely any benefit was obtained from weak solutions. A 50 per cent. solution of the chloride of zinc cured some cases and also seemed to produce cicatricial hardening of the tissue. The leucorrhœa returned after a few months in nearly all cases. He considers Schröder's excision far superior for the treatment of such cases. He also made a series of careful microscopic examinations to test the comparative frequency of endometritis and endocervicitis. In thirty well-marked cases of the latter disease with slimy, purulent discharge, there were only five showing signs of endometritis, three of the interstitial form and two in which the glands were chiefly involved.

Reviews and Notices of Books.

On Aphasia or Loss of Speech and the Localization of the Faculty of Articulate Language. By Frederic Bateman, M.D., Fellow of the Royal College of Physicians, Senior Physician to the Norfolk and Norwich Hospital. Second edition; greatly enlarged. London; J. & A. Churchill; Jarrold & Sons, 3 Paternoster Buildings.

The learned author of this work was the first to publish, in English, a treatise on aphasia. This was upwards of twenty years ago. Great and numerous have been the advances in neuro-pathology since that period. It may be said that the work done during the last two decades in cerebral localization practically includes all our knowledge of this subject. Of all the problems in cerebral pathology, none exceed in interest those connected with the loss of speech.

Dr. Bateman devotes the first three chapters of his work to an account of the history of the building up of our knowledge on this subject. He gives a short but lucid resume of the more important cases contributed to the literature of aphasia by English, American and Continental writers of repute. The reader is thereby enabled with little trouble to follow the various steps which have led to our present views on loss of speech.

Not the least interesting part of the work is that referring to the author's own contributions. The subject of aphasia is treated of all in its relations and in all its forms and modifications.

There is certainly no work in the English language which gives such a full and accurate account of this abstruse subject. The author is to be congratulated on having produced a work that it will be standard authority on loss of speech. It represents a great amount of painstaking labour.

The Johns Hopkins Hospital Reports: Report on Gynæcology I. By Howard A. Kelly, M.D.

We have read this report with the greatest interest. The well-known ability and untiring industry of this young and brilliant gynæcologist, now so favourably circumstanced, led us to expect interesting things. We have not been disappointed. The report consists of over two hundred and fifty pages. There are a few illustrations. The number of papers is fifteen; thirteen of these are by the director himself, and one each by Drs. Robb and Withredge Williams, the assistants. First comes a description by Dr. Kelly of his operating-room and its appliances, and the accessory rooms. It is such as must fill every American gynæcologist with envy. This chapter also coniains a description of the precautions for asepsis and antisepsis. They are numerous and scrupulous. The experience of other surgeons shows that some of them may be unnecessary, but they are useful to impress assistants and nurses, who are sometimes with difficulty made to understand the importance of many necessary precautions. Next comes a report in detail of the abdominal sections from Oct. 16, 1889, to March 3, 1890; fifty in number. The list comprises examples of all the usual conditions and some of the more unusual and very rare ones. Dr. Kelly drains very frequently, even in cases without oozing of blood, to remove the serum which sometimes is so copiously effused. All the pus cases recovered. The author is fond of hysterorrhaphy, which he now does by two sutures on either side, round the utero-ovarian ligament up to the anterior abdominal wall. He claims for this much better results than by older methods. The third

paper is a Report of Autopsies of Two Cases Dying in the Gynæcological Wards without Operation. Both of these were tumors unfit for operation, and are instructive, as showing the results of too much delay in applying for operation. The fourth paper is on Composite Temperature and Pulse Charts of forty cases of Abdominal Section. The fifth is an excellent paper on the Management of the Drainage Tube in Abdominal Surgery, by Dr. Robb. Dr. Kelly does not use the sucker, but the method by a roll of gauze or wick passed in the bottom of the tube. We have not much experience of this method, but are inclined to believe that it must lessen the dangers and anxieties to the operator of drainage-tube cases. Detailed instructions are given, and we believe them most valuable. The ninth paper is on a report of the urinary examination of ninety-one gynæcological cases. The tenth describes the author's method of ligature of the uterus and ovarian arteries as a means of checking hemorrhage from the uterus, etc. We think this is a most valuable contribution to the technique of abdominal surgery. The eleventh paper, by Dr. Williams, is a report of two cases of carcinoma uteri in the negress, well known to be exceedingly rare.

We have no space for a more extended notice, but we believe we have shown the great value of this first report, and indicated what good reason there is for expecting great things in the future from the gynæcological department of Johns Hopkins.

A Text-Book of Comparative Physiology. For Students and Practitioners of Comparative (Veterinary) Medicine. By Wesley Mills, M.A., M.D., D.V.S., Professor of Physiology in the Faculty of Human Medicine and in the Faculty of Comparative Medicine and Veterinary Science of McGill University, Montreal; author of a Text-Book of Animal Physiology, etc. With 476 illustrations. New York: D. Appleton & Co. 1890.

The appearance of Dr. Mills' work on Animal Physiology was universally heralded as marking a distinct advance in the presentation of this subject. It was recognized as a very able and

successful effort to place this subject on a broader and more scientific basis The great success attained by Dr. Mills in showing the student of human medicine how to attain to a true knowledge of physiological principles has naturally made him anxious to extend the same benefits to students of comparative medicine. The work in question is the result. The introductory chapter is devoted to the consideration of the more important biological laws and principles. The introduction of such a chapter must prove a great aid to students, as they come but poorly stocked with biological knowledge. A special feature of the author's works on Physiology is the early consideration of reproduction. In the older works this was always left to the last, and many of our professors of physiology on this side of the Atlantic usually found no time to refer to it, and the consequence was that men passed through their medical course practically ignorant of the very foundations of physiological knowledge. In dealing with this part early the student is enabled to obtain a grasp of the whole subject which otherwise it is impossible for him to accomplish.

In looking over this book, we are especially pleased with the broad and able way in which the subjects of digestion, circulation and the nervous system are dealt with.

As a text-book on the subject of physiology for students of comparative medicine it will take the leading place. It is profusely and beautifully illustrated, and, altogether, reflects the greatest credit on author and publisher.

Flushing and Morbid Blushing: their Pathology and Treatment. By HARRY CAMPBELL, M.D., B.S., Senior Assistant Physician and Pathologist to the North-West London Hospital. London: H. K. Lewis, 136 Gower street. 1890,

The author of this work has already made his mark in the medical world through the publication of a very able and philosophical treatise on the "Causation of Disease." In the present work we have the subject of Flushing and Morbid Blushing treated of in the most comprehensive manner. The causation,

nature and treatment of these troublesome states is dealt with fully and clearly. The chapter on treatment is especially valuable, as it is a good index as to the proper methods of carrying out the treatment of neurasthenia in general.

Society Proceedings.

MEDICO-CHIRURGICAL SOCIETY OF MONTREAL.

Annual Meeting, October 10th, 1890.

G. E. Armstrong, M.D., President, in the Chair.

The annual meeting for the year 1890-91 was held at the Society's rooms, 14 Phillips Square, on the above date. There were present: Drs. Jas. Stewart, T. G. Roddick, Wm. Gardner, Alloway, Mills, Guerin, J. Gardner, Telfer, Corsan, Foley, Allan, Proudfoot, Finley, Jack, G. A. Brown, A. W. Gardner, Lapthorn Smith, W. G. Stewart, England, Springle, Rodger, F. W. Campbell, Buller, Johnston, Williams, McCarthy, E. P. Blackader, Ruttan, J. C. Cameron, McConnell, and Birkett.

After the minutes of the preceding meeting and those of the last annual meeting had been read and approved, Dr. Burgess was elected a member.

The Treasurer (Dr. MacDonald) presented his report for the past year, which showed a small balance to the credit of the Society. The treasurer's accounts were then duly audited and approved.

The retiring Secretary (Dr. Birkett) stated that the attendance during the session of 1889-90 was the largest since the existence of the Society; that a great number of meetings had been held; and that the membership had increased, numbering up to date ninety-four members.

The address of the retiring President was announced for the next meeting.

Votes of thanks to the retiring president, vice-president, members of council and secretary were then carried.

The following were elected office-bearers for the ensuing year:

President—Dr. F. J. Shepherd.

1st Vice-President—Dr. Proudfoot.
2nd Vice-President—Dr. R. L. MacDonnell.
Secretary—Dr. J. G. McCarthy.
Treasurer—Dr. J. A. MacDonald (re-elected).
Librarian—Dr. J. M. Jack.
Council—Drs. Armstrong, Bell and James Stewart.

Stated Meeting, October 24th, 1890.

F. J. SHEPHERD, M.D., PRESIDENT, IN THE CHAIR.

Diffuse Cancer of the Stomach.—DR. JOHNSTON, who exhibited this specimen, made the following remarks :

" The stomach is extremely small, its length from fundus to pylorus being only four inches. The wall is greatly thickened, measuring five-eighths of an inch in most places. It is firm and hard, with somewhat translucent appearance on section. All its coats are greatly thickened, and the stomach is converted into a narrow tube with firm, inelastic walls which do not collapse. Internally, an ulcer is seen just below the orifice of the œsophagus ; its edges are slightly raised. A few other small superficial ulcers are seen along the greater curvature. Pyloric ring firm and rigid ; admits the little finger. About the stomach firm fibrous adhesions exist binding it to the omentum, and there is some fibrous thickening between the stomach and pancreas. There is a single, small, firm, white nodule, size of a pea, in the upper surface of the right lobe of the liver. There is no enlargement of the epigastric or portal glands. The microscope shows great proliferation of the deeper cells of the mucosa. The muscular coat is uniformly infiltrated with solid masses of small epithelial cells, which fill all the lymph vessels between the muscle bundles. Many of these cells have undergone colloid change. The nodule in the liver has the typical appearance of a scirrhus, the cells being very scanty. This form occurs in about ten per cent. of all cases of gastric cancer. Many of the cases described as gastric cirrhosis are really cancerous."

DR. MOLSON stated that the patient, a woman, 58 years of age, had been admitted to the hospital in June last, complaining

of weakness and loss of appetite. Her illness had commenced four months previously, with vomiting and pain in the epigastrium. There was considerable emaciation and a somewhat cachectic appearance. The abdominal parietes were lax and shrunken. There was no tenderness nor distension of stomach, and no tumor could be felt. Patient became comatose, and died three and a half months from the date of her admission.

Epithelioma of the Tongue.—(From a case operated on by Dr. Bell.)—Dr. Johnston, who showed the specimen, said: The specimen shows the condition after complete amputation of the tongue. The stump is seen just in front of tne epiglottis; it presents a number of small follicular ulcers, and a small sinus exists where a ligature has remained; but there is no return of the growth or deep ulceration. On the floor of the mouth another small ligature is seen. There is no appearance of secondary cancer in the neighboring parts. The inferior maxilla, which had been sawn through at the time of the operation, had not united, and each end was covered by granulations. There was gangrene of the lungs; a large cavity occupied nearly the entire left upper lobe posteriorly; it was lined with a firm, well-marked granulation membrane in most places. A smaller cavity, the size of an apple, was found in the same lobe. A number of small areas of pneumonia were found throughout both lungs, and in several of these the vessels were found thrombosed and the centres gangrenous. Nothing was found to explain this condition. The bronchial tubes were free from foreign bodies. No cancerous thrombi were found in the vessels.

From the same patient the heart was exhibited. This showed a decided dilatation and hypertrophy of the left auricle; marked thickening in one of the segments of the mitral valve, apparently producing moderate stenosis when the valves were in position, though, after opening, the circumference of the orifice was normal. At the apex there was a large fibrous area in the heart-wall involving the papillary muscles. The larger coronary arteries were very atheromatous, their walls thickened and calcified. There was slight atheroma of the aorta. The wall of the left ventricle was thick; the muscle somewhat brown. The lungs

were free from brown pigmentation or dilatation of the capillaries.

Dr. Jas. Bell narrated the history of this case. The patient was a man, aged 64, who presented very extensive infiltration and ulceration of the anterior half of the tongue and the floor of the mouth. History of two months standing, but from other and more reliable sources it was found that the trouble had existed seven months, and that the patient had been treated with caustic applications. In the operation performed upon this patient, Dr. Bell had selected Syme's method of sawing through the inferior maxilla at its symphysis. The tongue and floor of the mouth were removed, and, besides, some glands which were infiltrated. The opposite sides of the bone were then brought together with strong silk, and the incision in the lower lip sutured with catgut. The patient was fed by nutrient enemata for forty-eight hours following the operation, when milk was introduced into the stomach by the œsophageal tube. On the fifth day, beef tea and eggs were added; but owing to the patient's inability to swallow, the tube had to be used whenever food was administered. He had not a bad symptom, and did remarkably well for four weeks; he then began to grow weak and cough occasionally. Signs of disease in the lungs were now manifest at the apices, both in front and behind. The patient gradually got worse and died on the forty-eighth day after the operation. Dr. Bell thought that the origin of the gangrene of the lungs might be ascribed to the entrance of food into the air-passages, either from the ineffectual efforts to make the patient swallow or else when using the œsophageal tube which had been entrusted to the nurse.

Dr. Shepherd was present at the operation. He generally performed excision of the tongue after ligature of both linguals, but remarked that Syme's method, adopted by Dr. Bell in this case, proved very successful. By the division of the lower jaw the whole of the diseased part was removed with great facility. As to the cause of the gangrene of the lungs, he could not say whether it were due to the insufflation of food or not. A patient from whom he had excised the tongue developed

gangrene of the lungs three weeks after the operation, but in this case there was erysipelas.

Dr. Mills, in referring to the probable cause of the gangrene of the lungs, remarked that after experimental operation in the lower animals, in which the vagi nerves had been cut, the animals died of pneumonia produced by insufflation of food. He suggested that the inflammation might be of purely nervous origin, and put forward the view of the possibility of its being produced by some degeneration of the fibres of the vagus.

Suppurative Pyelo-Nephritis.—Dr. Shepherd related the following case:—A man, aged 33, of intemperate habits, had gonorrhœa fourteen years ago, and shortly afterwards had difficulty in micturition, the stream gradually diminishing in size; he had suppression of urine in 1878, and had to be aspirated. He felt better for a year, when, owing to his intemperate habits, he again experienced difficulty in micturition, and from 1882 to 1884 he was unable to fully empty his bladder. External urethrotomy was performed in Glasgow in 1886, and for two years following he was free from the complaint. He applied to the out-door department of the General Hospital on the 28th of June, suffering from retention. It being impossible to pass a catheter, he was aspirated above the pubes. Dr. Shepherd afterwards succeeded in passing a small catgut bougie and then introduced sounds to number 7. Three days later sounds up to number 12 were passed. Patient afterwards felt better and was able to pass his urine quite freely, and left the hospital on July 4th. Three weeks afterwards he was readmitted, complaining of frequency of micturition and pain in the right lumbar region, with passage of blood. The severity of the pain over the right kidney increased, extending along the course of the ureter and into the right testicle. The urine, which varied from 48 to 80 ounces in the twenty-four hours, was of a dark-brownish color, containing a considerable amount of pus and blood cells. The patient gradually sank, and died August 12th. Temperature never reached above 102°, and for six days previous to his death was subnormal.

Dr. Johnston, who exhibited the specimen, remarked that it

showed a stricture just anterior to the bulbous urethra. There was no induration in the wall of the urethra. The kidneys showed slight dilatation of the pelves and calices. About the right kidney there was a large mass of dense fibrous tissue closely adherent to the capsule.

Ruptured Tubal Pregnancy.—Dr. Wm. Gardner showed this specimen from a case in which he had opened the abdomen a week previously. Dr. Gurd, in whose practice the case occurred, had correctly diagnosed the condition. The patient, aged 26, married eight years, the mother of three full-grown children, the last over two years. Since then she had pelvic symptoms. She menstruated last on 20th June, and began to vomit a few days later, as in all her previous pregnancies, and was convinced that she was again pregnant. This continued until the 21st of September, when, during a rough drive, she was suddenly seized with intense abdominal pain accompanied by vomiting and a bloody discharge from the vagina. On getting home she fainted. The pain was relieved in a few hours by full doses of morphia, and she got up in a day or two; but soon had recurrence of pain of the same character and intensity, which compelled her to lie in bed on her back. She was first seen by Dr. Gardner a week before operation; she looked blanched and anxious. The abdomen was somewhat distended in lower part by a fixed, tender mass. The uterus lay behind the pubes, pressed forward by a tender, elastic mass, fixing the roof of the vagina and filling the pelvis. A week later the symptoms and physical signs had all increased. She was operated upon on the 17th of October. On getting through the adherent omentum a mass of blood-clot was disclosed; this was scraped out and found to contain some decolorized blood. The right Fallopian tube was expanded to a mass of the size of a large hen's egg. This was tied and removed, the cavity washed out, and a large glass drainage-tube carried to the floor of the Douglas pouch. When put to bed, patient was very weak, with a pulse of 160, but rallied promptly, and is making an easy recovery.

Dr. Johnston, who had examined the specimen, submitted the following report: The specimen is about the size of an egg,

and consists chiefly of firm, elastic, fibrinous material, which resembles partially decolorized and organizing blood-clot. It seems to contain numerous vessels. On placing it in water, a delicate fringe of minute villi covers nearly its whole surface. These show, under the microscope, the branched and clubbed appearance characteristic of chorionic villi. At one point a thick, flat, muscular band is attached to the mass, and appears to be part of the greatly thickened and dilated Fallopian tube. On section the inner surface appears to be for the most part a mixture of old and recent blood-clot and vascular tissue. Situated near the surface, at the end farthest from the attached bit of Fallopian tube, is a flattened cystic space the size of a pigeon's egg, lined with a delicate greyish-white, smooth membrane, evidently the amnion. At one point on this small, flattened projection is seen, apparently, the remains of the umbilical cord. No traces of the fœtus could be seen.

Dr. Gurd wished to remark that the patient had suffered from uncontrollable vomiting in her previous pregnancies, and in the present instance the vomiting had been very severe up to the time of the operation.

Dr. Lapthorn Smith congratulated Drs. Gardner and Gurd on the successful issue of this case. He said that in some of these cases of ruptured extra-uterine pregnancy the fœtus had been found in very unusual situations in the abdominal cavity.

Decidual Membrane.—Dr. Wm. Gardner exhibited a very interesting specimen of the decidual membrane which formed a perfect and complete cast of the cavity of the uterus. The patient had borne one child. She was comparatively well up to last week, when she was suddenly seized with vomiting and fainting. On examination, Dr. Gardner found physical signs somewhat similar to the case above mentioned. A week later the patient was seized with severe pain and the membrane expelled. He believed it to be without doubt a case of ectopic gestation. The patient was still under observation.

Anchylosis of the Spine.—Dr. Molson brought before the Society a man, aged 30, apparently the subject of anchylosis of the spine. This was said to have begun suddenly three years

ago, with pain in the back of the neck. The patient had had rheumatism eight years ago. There was no history of venereal disease, and nothing in the family history. On examination, the patient appeared fairly well nourished. There seemed to be some tenderness over the dorsal region. In all movements the spine appeared apparently fixed, but rotation and nodding movements of the head were retained to some extent.

Dr. Roddick believed the case to be one of malingering; as there was nothing in the personal history to produce such extreme anchylosis. He believed that under an anæsthetic motion would reappear in the now apparently rigid spine.

Dr. Rodger agreed with Dr. Roddick, and considered these symptoms to be feigned.

Dr. G. A. Brown had met with a case in hospital with anchylosis of spine, knee and hip joints. The patient had been the subject of gonorrhœal rheumatism.

Dr. James Bell thought that the case was one of real anchylosis, but would like to have a closer examination of the case.

Dr. Mills had noticed cases of spinal anchylosis in the lower animals.

Dr. DeCow would suggest the use of the actual cautery as a means to the diagnosis in this case.

Dr. Molson stated that the patient had been under close observation, but that he had never betrayed any signs of movement of the spine.

Dr. Birkett found the muscles too well developed for a patient the subject of general anchylosis of long standing.

Dr. Shepherd had examined the patient; he found no caries; muscles were in a state of tension. He thought it was a case of malingering; the idea of which possibly originated in some slight rheumatic affection. He had seen cases of rheumatoid arthritis in which all the joints were involved. He noticed that there was movement of the axis and atlas, which seemed peculiar, considering that all the rest of the spine appeared anchylosed.

The President's Address.

Dr. G. E. Armstrong, the retiring president, then read the following address :—

Mr. President and Gentlemen,—In following a time-honored custom of reviewing the work done by our Society during the past year, I wish to take the opportunity of thanking one and all for the courtesy shown to the chair during that period, and for the promptness with which you have come forward with pathological specimens, papers, and cases in practice. I have tried to do my best to make the meetings interesting and instructive, and I only hope that none are more conscious than the speaker of my shortcomings. The past year has been one of the Society's best. We have had 19 meetings as compared with 16 the year before, and the average attendance has also increased, being 26.4—25.5 being the average for the year before. The largest number at any one meeting was 42, and the smallest number 17. During the year 1888-89 four new members joined the Society, and during the year 1889-90 eleven new members joined. Our total membership at the beginning of the year was 83, and at the close of the year 94. Death has not entered to claim any of our number during the year.

In looking over the work done during the year, its varied character is quite noticeable ; subjects interesting to general practitioners and specialists also being taken up and discussed at nearly every meeting.

Medicine.—In medicine, Dr. Hutchinson related an interesting case in which delirium followed acute pneumonia, and of hysteria occurring during the course of rheumatism, presenting considerable difficulty in diagnosis. We had an interesting paper from Dr. McCarthy on the distribution of lesions in chronic phthisis. Dr. R. L. MacDonnnell brought before the Society the results of his experience in one hundred cases of typhoid fever, of which he had carefully kept notes. This paper excited a very interesting discussion on many of the points worked out. Dr. MacDonnell also showed to the Society a case of Hodgkin's disease. Dr. Campbell, a case of pneumonia, in which symptoms were entirely objective. A paper on aneurysm of the arch of

the aorta was read by Dr. MacDonnell and Dr. Major together. Dr. Major read an interesting paper on the use of hydrogen peroxide in diphtheria, speaking favorably of its action. At the same meeting Dr. Major read notes of two cases of deflection of nasal septum and their treatment.

Surgery.—In surgery, a paper on a case of appendicitis by Drs. Shepherd and MacDonnell, in which an operation saved the patient's life. Dr. Praeger of Nanaimo sent a paper on cholecystectomy, which was read by Dr. Shepherd. Dr. Bell exhibited a case of multiple fibroma of skin, and nævus with sarcoma of popliteal space. Dr. Roddick, an interesting case of fragilitas ossium and an interesting review of the subject. Dr. Bell, a case of talipes equino varus, upon which he had operated with good result; also two cases, one of genu valgum and one of genu varus, after operation, in which the result was very satisfactory, photographs of their condition before operation being also shown.

Midwifery.—In midwifery, Dr. G. T. Ross presented a paper on missed abortion, which gave rise to a good deal of discussion. And a paper of more than ordinary interest from Drs. Cameron and Gardner on a case of labor obstructed by a large fibroid.

Neurology.—In neurology, Dr. Blackader read a paper on Friedrich's ataxia, of much interest, and Dr. Stewart exhibited a case of hemiatrophy of the tongue, with left-sided facial paralysis and polyuria.

Skin Diseases.—Dr. Foley submitted a paper on the influence of clothing on diseases of the skin.

Therapeutics.—Dr. Stewart, a paper detailing his experience in the use of exalgine in a large number of cases.

Gynæcology.—In gynæcology, Dr. Trenholme read a paper on hysterectomy for fibroid tumor of the uterus, relating nine cases which he had operated upon; and Dr. Gardner a paper on abdominal section in tubercular disease of peritoneum and uterine appendages, relating several cases of unusual interest. Dr. Alloway presented a paper upon twenty cases of Alexander's operation for retroversion, speaking favorably of the results obtained. Dr. Smith read a paper on five cases of laparotomy,

drawing attention to several practical points connected with the details of the operation.

Ophthalmology.—Dr. Buller presented a patient from whom he had removed a tumor of the orbit which had surrounded the optic nerve.

I regret that the younger members of the Society have not taken a greater part in the discussion of these papers, and I think that they, as well as the Society, are the losers. One cannot begin too young to learn to express one's thoughts clearly and concisely. It would add much to the interest of our meetings if the younger members of the profession would come forward and take an active part in the Society's work.

One of the most interesting and instructive sections of our work is the pathological, and it is a matter of mutual congratulation that there has been at nearly every meeting such an abundant supply of pathological specimens, abundant in quantity and variety. The Society is especially, and very greatly, indebted to Dr. Johnston for the attention that he has given to this department of our work, and for the able and clear demonstration of the specimens that have been exhibited. Among others we have had before us for examination a great number of fibroid growths, each one accompanied by a complete history. Dr. Gardner has shown several uterine fibroids successfully removed by him, also a fibro-cyst of uterus, an interstitial fibromyoma of uterus, a myo-sarcoma of uterus, as well as a small multilocular cyst of ovary and a cyst of the broad ligaments not involving the ovary, also a papilloma of ovary and specimen of extra-uterine fœtation with history. Dr. Shepherd, a fibro-cyst of ovary, which presented considerable difficulties in its removal, followed, fortunately, by a happy result. Dr. Trenholme, a parovarian retro-peritoneal cyst. Dr. Smith showed a fibro-cyst of uterus. Dr. Alloway, a large cystoma weighing 40 lbs, a blood cyst of ovary and a pyosalpinx, also a specimen of epithelioma of cervix. Another blood cyst of ovary was shown by Dr. Armstrong. A number of vesical calculi have been exhibited. One by Dr. Bell, removed from a patient the subject of diabetes mellitus ; a large vesical calculus weighing over five ounces, by

Dr. Hingston, which he had removed by lateral lithotomy ; one of pure cystine, removed by Dr. Roddick ; and one by Dr. Gurd. A large gall-stone, which had given rise to symptoms of intestinal obstruction, was shown by Dr. Bell. Dr. Milis exhibited a triple phosphate calculus removed from urethra of a dog. Dr. Major showed to the Society a fine specimen of rhinolith which he had removed. Dr. Hutchinson, a piece of egg-shell with an interesting history, tendencies to show that it had passed through the larynx of a young child, remaining in a bronchus for a few days, when it was coughed up. Dr. Johnston showed for Dr. Brown a tympanum, in which the roof had been perforated by chronic suppurative otitis media. Dr. Buller exhibited a tumor removed from the orbit which had been perforated by the optic nerve. Dr. Foley showed specimens from a case of trichorexis nodosa. Dr. Mills exhibited a very interesting instance of hermaphrodism in a pig. An example of necrosis of femur was shown by Dr. Hingston. A perforated appendix with fæcal concretion, removed by Dr. Shepherd, was shown and history given ; another perforated appendix with fæcal concretion by Dr. Armstrong. Dr. Johnston showed two cases of elephantiasis of breast, one of them was sent by Dr. Gooding of Barbadoes. Dr. R. L. MacDonnell, an example of aneurism of descending aorta. A specimen of aneurism of thoracic aorta was shown by Dr. Johnston. Dr. Johnston also showed a specimen of embolism of abdominal aorta, as well as a specimen of thrombosis of left ventricle of heart, and another specimen of ruptured heart. A specimen of tuberculosis of heart was shown by Dr. Johnston, and one of myocarditis by Dr. Hutchinson. Dr. Roddick exhibited tuberculous glands of neck ; he removed thirty of these from one patient. Dr. Bell showed the urinary organs from a patient upon whom he had performed internal urethrotomy, the patient subsequently dying of tuberculous disease of the kidneys, also an example of sarcoma of foot, which Dr. Bell removed by a Syme. Dr. Springle showed the photograph of a child in whom there existed left-sided facial paralysis and hemiatrophy of the tongue, thought to be due to injury inflicted by forceps during delivery. Two stomachs perforated by ulcers were

shown, one by Dr. DeCow and one by Dr. Armstrong. In addition, Dr. Johnston exhibited, among many others, intra-capsular fracture of femur, fracture of left os. innominatum through acetabulum, with dislocation at sacro-iliac synchondrosis and dislocation at symphysis pubis, fatty heart, a heart infiltrated with adipose tissue, a case of intestinal obstruction in a child, of laceration of urethra, gunshot wound of brain, lymphatic cystoma of broad ligament. Dr. Gurd presented a specimen of missed abortion, which was referred to a special committee for examination and report. Dr. England showed a retained abortion with a very complete history, which showed that it had been retained six months after probable time of death. Dr. Shepherd showed a kidney, removed post-mortem, containing a calculus; five years before Dr. Shepherd had removed the other kidney for the same condition.

In conclusion, I may add that the financial condition of the Society is good, and that arrangements are completed to render our assembly room more inviting by adding a carpet, and a reading-room will be comfortably furnished where members may at any time spend an hour consulting the journals which the Society provides.

The growth of the Society, as shown not only by an increase in number of members, but the growth of individual interest, as shown by the increased average of attendance and the variety of subjects introduced for discussion, and the what to some has seemed at times to be an overstock of material, gave rise during the year to the question of the advisability of rearranging the order of work or of meeting oftener than once a fortnight.

In looking over the work done by the Society during the year, I think it will strike most of you that almost as much time has been given to pathology as to all other work together, and I think I voice the unanimous feeling of the members when I say that we don't want any less pathology. It is interesting and instructive, and, I believe, has done a very great deal to elevate the English portion of the profession in Montreal and the character of the work they do. It has made them better readers, better thinkers, and better observers. But perhaps I may be

allowed to suggest that if the work becomes too great, and a subdivision is necessary, that it be made on a line that will divide the work only and not the members. If pathology, for example, was allowed to occupy the whole of one evening every member would attend, and alternate evenings could be devoted to the reading of papers, the relating of cases, and the discussion of them. I believe it to be to the advantage of all that the senior and junior members meet together and work together. And that the specialists and pseudo-specialists and general practitioner meet together, that in their work they may be in touch and harmony.

I thank you once more for the high honor you conferred upon me in electing me a year ago your chairman, and wish you, Mr. President, great pleasure and success during your term of office.

Selections.

A FURTHER COMMUNICATION ON A CURE FOR TUBERCULOSIS.

By Prof. Robert Koch, M.D., of Berlin.

In an address delivered before the International Medical Congress I mentioned a remedy which conferred on the animals experimented upon an immunity against inoculation with the tubercle bacillus, and which arrested tuberculous disease. Investigations have now been carried out on human patients, and these form the subject of the following observations. It was originally my intention to complete the research, and especially to gain sufficient experience regarding the application of the remedy in practice, and its production on a large scale, before publishing anything on the subject; but in spite of all precautions, so many accounts have reached the public, and in such an exaggerated and distorted form, that it seems imperative, in order to prevent false impressions, to give at once a review of the position of the subject at the present stage of the inquiry. It is true that this review can, under these circumstances, be only brief, and must leave open many important questions.

The investigations have been carried on under my direction

by Dr. A. Libbertz and Stabsarzt Dr. E. Pfuhl, and are still in progress. Patients were placed at my disposal by Prof. Brieger from his polyclinic; by Dr. W. Levy, from his private surgical clinic; by Geheimrath Drs. Frantzel and Oberstabsarzt Kohler, from the Charite Hospital; and by Geheimrath v. Bergmann, from the surgical clinic of the University. I wish to express my thanks to these gentlemen.

As regards the origin and the preparation of the remedy, I am unable to make any statement, as my research is not yet concluded. I reserve this for a future communication.*

The remedy is a brownish, transparent liquid, which does not require special care to prevent decomposition. For use, this fluid must be more or less diluted, and the dilutions are liable to undergo decomposition if prepared with distilled water. As bacterial growths soon develop in them they become turbid, and are then unfit for use. To prevent this, the diluted liquid must be sterilized by heat and preserved under a cotton-wool stopper, or, more conveniently, prepared with a one-half per cent. solution of phenol.

It would seem, however, that the effect is weakened both by frequent heating and by mixture with phenol solution, and I have therefore always made use of a freshly-prepared solution. Introduced into the stomach the remedy has no effect. In order to obtain a reliable effect it must be injected subcutaneously, and for this purpose we have exclusively used the small syringe suggested by me for bacteriological work. It is furnished with a small India-rubber ball and has no piston. This syringe can easily be kept aseptic by the use of absolute alcohol, and to this we attribute the fact that not a single abscess has been observed in the course of more than a thousand subcutaneous injections.

The place chosen for the injection, after several trials of other places, was the skin of the back between the shoulder-blades and the lumbar region, because here the injection led to the least local reaction—generally none at all, and was almost pain-

* Doctors wishing to make investigations with the remedy at present, can obtain it from Dr. A. Libbertz, Lueneburger Strasse. 28. Berlin, N.W., who has undertaken the preparation of the remedy with my own and Dr. Pfuhl's co-operation, but I must remark that the quantity prepared at present is but small, and that larger quantities will not be obtainable for some weeks.

less. As regards the effect of the remedy on the human patient, it was clear from the beginning of the research that in one very important particular the human being reacts to the remedy differently from the animal generally used in experiments, namely, the guinea-pig. A new proof for the experimenter of the all-important law that experiment on animals is not conclusive, for the human patient proved extraordinarily more sensitive than the guinea-pig. As regards the effect of the remedy, a healthy guinea-pig will bear a subcutaneous injection of two cubic centimetres, and even more, of the liquid without being sensibly affected; but in the case of a full-grown healthy man 0 25 cubic centimetre suffices to produce an intense effect. Calculated by the body-weight, one-fifteen-thousandth part of the quantity which has no appeciable effect on the guinea pig acts powerfully on the human being.

The symptoms arising from an injection of 0.25 cubic centimetre I have observed after an injection made in my own upper arm. They were briefly as follows; three to four hours after the injection there came on pain in the limbs, fatigue, inclination to cough, difficulty of breathing, which speedily increased in the fifth hour, and were unusually violent. A chill followed, which lasted almost an hour. At the same time there were nausea, vomiting, and a rise of body temperature to 39.6° C.

After twelve hours all these symptoms abated, the temperature fell, and on the next day it was normal. A feeling of fatigue and pain in the limbs continued for a few days, and for exactly the same period of time the site of injection remained slightly painful and red. The smallest quantity of the remedy which will affect the healthy human being is about 0.01 cubic centimetre, equal to 1 cubic centimetre of the one-hundredth dilution. As has been proved by numerous experiments, when this dose is used, reaction in most people shows itself only by slight pains in the limbs and transient fatigue. A few showed a rise of temperature to about 38° C.

Although the effect of the remedy in equal doses is very different in animals and in human beings, if calculated by body-weight, in some other respects, there is much similarity in the

symptoms produced, the most important of these resemblances being the specific action of the remedy on the tuberculous process, the varieties of which I will not here describe. I will make no further reference to its effects on animals, but I will at once turn to its extraordinary action on tuberculosis in human beings. The healthy human being reacts either not at all, or scarcely at all, as we have seen, when 0.01 cubic centimetre is used. The same holds good with regard to patients suffering from diseases other than tuberculosis, as repeated experiments have proved ; but the case is very different when the disease is *tuberculosis*. A dose of 0.01 cubic centimetre injected subcutaneously into tuberculous patients causes a severe general reaction as well as a local one.

I gave children aged from two to six years one-tenth of this dose, that is to say, 0.001 cubic centimetre—very delicate children only 0.0005 cubic centimetre—and obtained powerful, but in no way dangerous reaction. The general reaction consists in an attack of fever, which usually begins with rigors, and raises the temperature above 39°, often up to 40°, and even 41° C. This is accompanied by pain in the limbs, coughing, great fatigue, and often sickness and vomiting. In several cases a slight icteroid discoloration was observed, and occasionally an eruption like measles on the chest and neck. The attack usually begins four to five hours after injection, and lasts from twelve to fifteen hours. Occasionally it begins later and then runs its course with less intensity.

The patients are very little affected by the attack, and as soon as it is over feel comparatively well, generally better than before. The local reaction can be best observed in cases in which the tuberculous affection is visible ; for instance, in cases of lupus, changes take place which show the specific anti-tuberculous action of the remedy to a most surprising degree. A few hours after an injection into the skin of the back—that is, in a spot far removed from the diseased area on the face or elsewhere—the lupus begins to swell and to redden, and this it does generally before the initial rigor. During the fever the swelling and redness increase, and may finally reach a high degree, so that the

lupus-tissue becomes brownish and necrotic in places where the growth was sharply defined. We sometimes found a much swollen and brownish spot surrounded by a whitish edge almost one centimetre wide, which again was surrounded by a broad band of bright red.

After the subsidence of the fever the swelling of the lupus-tissue gradually decreases and disappears in about two or three days. The lupus-spots themselves are then covered by a soft deposit, which filters outwards and dries in the air. The growth then changes to a crust, which falls off after two or three weeks, and which—sometimes after only one injection—leaves a clean, red cicatrix behind. Generally, however, several injection are required for the complete removal of the lupus-tissue ; but of this, more later on. I must mention as a point of special importance that the changes described are exactly confined to the parts of the skin affected with lupus. Even the smallest nodules and those most deeply hidden in the lupus-tissue go through the process and become visible in consequenee of the swelling and change of color, whilst the tissue in itself in which the lupus-changes have entirely ceased remains unchanged. The observations of a lupus-case treated by the remedy is so instructive, and is necessarily so convincing, that those who wish to make a trial of the remedy should, if possible, begin with a case of lupus.

This specific action of the remedy in these cases is less striking, but it is as perceptible to eye and touch as are the local reactions in cases of tuberculosis of the glands, bones, joints, etc. In these cases swelling, increased sensibility, and redness of the superficial parts are observed. The reaction of the internal organs, especially of the lungs, is not at once apparent, unless the increased cough and expectoration of consumptive patients after the first injection be considered as pointing to a local reaction in these cases. The general reaction is dominant ; nevertheless, we are justified in assuming that here, too, changes take place similar to those seen in lupus cases. The symptoms of reaction above described occurred, without exception, in all cases in which a tuberculous process was present in the organism after the use of 0.01 cubic centimetre, and I think I am justified in

saying that the remedy will, therefore, in the future, form an indispensable aid to diagnosis.

By its aid we shall be able to diagnose doubtful cases of phthisis; for instances, cases in which it is impossible to obtain certainty as to the nature of the disease by the discovery of bacilli or elastic fibres in the sputum or by physical examination. In cases of tuberculosis of the lungs or joints which have been apparently cured we shall be able to make sure whether the disease has really finished its course, and whether there be still some diseased spots from which it might again arise as a flame from a spark hidden by ashes.

Of greater importance, however, than its diagnostic use, is the therapeutic effect of the remedy. In the description of the changes which a subcutaneous injection of the remedy produces in portions of the skin affected by lupus, I mentioned that after the subsidence of the swelling and decrease of the redness the lupus-tissue does not return to its original condition, but that it is destroyed to a greater or less extent and disappears. Observation shows that in some parts this result is brought about by the diseased tissue becoming necrotic, even after but one sufficiently large injection, and at a later stage it is thrown off as a dead mass. In other parts a disappearance or, as it were, a necrosis of the tissue, seems to occur, and in such cases the injection must be repeated to complete the cure.

In what way this process of cure occurs cannot as yet be stated with certainty, as the necessary histological investigations are not complete; but this much is certain, that there is no question of a destruction of the tubercle bacilli in the tissues, but only that the tissue inclosing the tubercle bacilli is affected by the remedy. Beyond this there is, as is shown by the visible swelling and redness, considerable disturbance of the circulation, and, evidently, in connection therewith, deeply-seated changes in its nutrition which cause the tissue to die more or less quickly and deeply, according to the extent of the action of the remedy. To recapitulate, the remedy does not kill the tubercle bacilli but the tuberculous tissue, and this gives us clearly and definitely the limit that bounds the action of the remedy.

It can influence living tuberculous tissue only, and has no effect on dead tissue; as, for instance, necrotic cheesy masses, necrotic bones, etc., nor has it any effect on tissue made necrotic by the remedy itself. In such masses of dead tissue living tubercle bacilli may possibly still be present, and are either thrown off with the necrosed tissue, or may possibly enter the neighboring and still living tissue under certain circumstances of the therapeutic activity. If the remedy is to be rendered as fruitful as possible this peculiarity in its mode of action must be caused to undergo necrosis, and then everything must be done to remove the dead tissue as soon as possible, as, for instance, by surgical interference.

Where this is not possible, and where the organism is unassisted in throwing off the tissue slowly, the endangered living tissue must be protected from fresh incursion of the parasites by continuous applications of the remedy. The fact that the remedy makes tuberculous tissue necrotic and acts only on the living tissue, helps to explain another peculiar characteristic thereof, namely, that it can be given in rapidly-increasing doses. At first sight, this phenomenon would seem to point to the establishment of tolerance, but since it is found that the dose can, in the course of about three weeks, be increased to five hundred times the original amount, tolerance can no longer be accepted as an explanation. As we know of nothing analogous to such a rapid and complete adaptation to an extremely active remedy, the phenomenon must rather be explained in this way, that in the beginning of the treatment there is a good deal of tuberculous living tissue, and that consequently a small amount of the active principle suffices to cause strong reaction, but by each injection a certain amount of the tissue capable of reacting disappears, and then larger doses are necessary to produce the same amount of reaction as before.

Within limits, a certain degree of habituation may be perceived as soon as the tuberculous patient has been treated with increasing doses, for so soon as the point is reached at which reaction is as feeble as that of a non-tuberculous patient, then it may be assumed that all tuberculous tissue is destroyed. Then the treat-

ment will only have to be continued by slowly-increasing doses and with interruptions in order that the patient may be protected from fresh infections while bacilli are still present in the organism, and whether this conception and the inference that follows from it be correct, the future must show. They were conclusive as far as I am concerned, in determining the mode of treatment by the remedy in which our investigations was practised in the following manner. To begin with the simplest case—lupus.

In nearly every one of these cases I injected the full dose of 0.01 cubic centimetre from the first. I then allowed the reaction to come to an end, and then, after a week or two, again injected 0.01 cubic centimetre, continuing in the same way until the reaction becomes weaker and weaker, and then ceased. In two cases of facial lupus the lupus-spots were thus brought to complete cicatrization by three or four injections; the other lupus-cases improved in proportion to duration of treatment.

All these patients had been sufferers for many years, having been previously treated unsuccessfully by various therapeutic methods. Glandular, bone, and joint tuberculosis was similarly treated, large doses at long intervals being made use of. The result was the same as in the lupus-cases—namely, a speedy cure in recent and slight cases, slow improvement in severe cases.

The circumstances were somewhat different in phthisical patients, who constitute the largest number of our patients. Patients with decided pulmonary tuberculosis are much more sensitive to the remedy than those with surgical tuberculous affections.

We were obliged to diminish the dose for the phthisical patients, and found that they almost all reacted strongly to 0.002 cubic centimetre. From this first small dose it was possible to rise more or less quickly to the amount that is well borne by other patients. Our course was generally as follows: an injection of 0.001 cubic centimetre was first given to the phthisical patient, and from this a rise of temperature followed, the same dose being repeated once a day until no reaction could be observed. We then increased the dose to 0.002 cubic centi-

metre, until this was borne without reaction, and so on, increasing by 0.001, or at most 0.002 to 0.005, cubic centimetre.

This mild course seemed to be imperative in cases in which there was great debility. By this mode of treatment the patient can be brought to tolerate large doses of the remedy with scarcely a rise of temperature. But patients of greater strength were treated from the first partly with larger doses and partly with frequently repeated doses. Here it seemed that the beneficial results were more quickly obtained. The action of the remedy in cases of phthisis generally showed itself as follows: Cough and expectoration were generally increased a little after the first injection, then grew less and less, and in the most favorable cases entirely disappeared. The expectoration also lost its purulent character and became mucous. As a rule, the number of bacilli decreased only when the expectoration began to present a mucous appearance. They then entirely disappeared, but were again observed occasionally until expectoration completely ceased. Simultaneously the night-sweats ceased, the patients' appearance improved, and they increased in weight within from four to six weeks.

Patients under treatment for the first stage of phthisis were freed from every symptom of disease and might be pronounced cured; patients with cavities not yet too highly developed improved considerably and were almost cured, and only in those whose lungs contained many large cavities could no improvement be proved. Objectively, even in these cases the expectoration decreased and the subjective condition improved. These experiences lead me to suppose that phthisis in the beginning can be cured with certainty by this remedy. This statement requires limitation in so for as at present no conclusive experiences can possibly be brought forward to prove whether the cure is lasting.

Relapses naturally may occur, but it can be assumed that they may be cured as easily and quickly as the first attack. On the other hand, it seems possible that, as in other infectious diseases, patients once cured may retain their immunity; but this, too, for the present, must remain an open question. In part, this may be assumed for other cases, when not too far advanced; but patients

with large cavities, who suffer from complications caused, for instance, by the incnrsion of other pus-forming micro-organisms into the cavities or by incurable pathological changes in other organs will probably obtain lasting benefit from the remedy in only exceptional cases. Even such patients, however, were benefited for a time. This seems to prove that in their cases, too, the original tuberculous disease is influenced by the remedy in the same manner as in the other cases, but that we are unable to remove the necrotic masses of tissues with the secondary suppurative processes.

The thought involuntarily suggests itself that relief might possibly be brought to many of these severly-afflicted patients by a combination of this new therapeutic method with surgical operations (such as the operation for empyæma), or with other curative methods, and here I would earnestly warn people against conventional and indiscriminate application of the remedy in all cases of tuberculosis. The treatment will probably be quite simple in cases in which the beginning of phthisis and simple surgical cases are concerned, but in all other forms of tuberculosis medical art must have full sway by careful individualization and making use of all other auxiliary methods to assist the action of the remedy.

In many cases the decided impression was created that the careful nursing bestowed on the patient had a considerable influence on the result of the treatment, and I am in favor of applying the remedy in proper sanataria as opposed to treatment at home and in the out-patient room. How far the methods of treatment already recognized as curative, such as mountain climate, fresh-air treatment, special diet, etc., may be profitably combined with the new treatment cannot yet be definitely stated, but I believe that these therapeutic methods will also be highly advantageous when combined with the new treatment. In many cases, especially in the convalescent stage, as regards tuberculosis of the brain and larynx, and miliary tuberculosis, we had too little material at our disposal to gain proper experience.

The most important point to be observed in the new treatment is its early application. The proper subjects for treatment are

patients in the initial stage of phthisis, for in them the curative action can be most fully shown, and for this reason, too, it cannot be too seriously pointed out that practitioners must in the future be more than ever alive to the importance of diagnosing phthisis in as early a stage as possible. Up to the present time the proof of tubercle bacilli in the sputum was considered more as an interesting point of secondary importance, which, though it made diagnosis more certain, could not help the patient in any way, and which, in consequence, was often neglected.

This I have lately repeatedly had occasion to observe in numerous cases of phthisis, which had generally gone through the hands of several doctors without any examination of the sputum having been made. In the future this must be changed. A doctor who shall neglect to diagnose phthisis in its earliest stage by all methods at his command, especially by examining the sputum, will be guilty of the most serious neglect of his patient, whose life may depend upon the early application of the specific treatment. In consequence, in doubtful cases, medical practitioners must make sure of the presence or absence of tnberculosis, and then only will the new therapeutic method become a blessing to suffering humanity, when all cases of tuberculosis are treated in their earliest stage, and we no longer meet with neglected serious cases forming an extinguishable source of fresh infections. Finally, I would remark, that I have purposely omitted statistical accounts and descriptions of individual cases, because the medical men who furnish us with patients for our investigations have themselves decided to publish the description of their cases, and I wished my account to be as objective as possible, leaving to them all that is purely personal.—*Deutche medicinische Wochenschrift*, Nov. 14th, 1890.—*Philadelphia Medical News*, Nov. 15th, 1890.

Pernicious Anæmia in Childhood.—A paper on pernicious anæmia in childhood, contributed by Drs. Ad. D'Espine and C. Picot, of Geneva, to the section of Pædiatrics of the International Medical Congress (1890), is published in the *Revue de Médecine* for October 10th. Each author con-

tributes one case, and they give brief notes of four others, which are all that they have been able to find recorded in the literature of the subject. In both the cases now published for the first time the course of the malady was very brief; in neither case did the symptoms endure more than about one month. Dr. D'Espine's patient was aged 2 years, Dr. Picot's 13; both were healthy children, in whom marked anæmia rapidly developed without any discoverable cause; the possibility of the presence of *bothriocephalus latus* was not overlooked, but the exhibition of male fern was not followed by the expulsion of a worm. In the younger child there was at an early stage some gastric disturbance, and the administration of castor oil led to vomiting, but no diarrhœa; in the elder child, on the other hand, there were at an early stage attacks of colic and diarrhœa, and or two attacks of vomiting. Both suffered from loss of appetite and continual thirst; both presented purpuric patches, the younger petechiæ also; the gums in both were healthy; epistaxis occurred in both, but was severe only in the elder and towards termination of his illness; the blood in both was pale and did not coagulate properly. In both there was firm œdema of the lower extremities, and in the younger an anæmic cardiac murmur, and towards the end a *bruit de galop*. Dyspnœa was present in both, and in the elder child was very severe—in fact, the most prominent symptom. In the younger child there were two slight accesses of fever ten days and a week before death, and for the last four days moderate remittent fever; in the elder there was no fever. A necropsy was obtained in Dr. Picot's case. The abnormalities noticed were: liver large, firm, pale yellow, and of fatty appearance, gall-bladder empty; spleen nearly twice the normal size, soft, and congested; the stomach was healthy, with the exception of two or three vascular points; the duodenum, jejunum, and ileum were healthy to within four or five inches of the ileo-cæcal valve; below that point the intestine was thickened, as were also the cæcum and appendix vermiformis; there was no ulceration, and no swelling of Peyer's patches; on section the intestine had a greyish lardaceous aspect; the corresponding mesenteric glands were enlarged; the rest of

the large intestine was healthy. Dr. Mayor made a microscopical examination; he found all the coats of the intestine except the serous copiously infiltrated with leucocytes; these leucocytes were not contained in a reticulum, and Dr. Mayor concludes that the lesion was not lymphadenoma. The thymus gland was persistent in this boy, large, heavy, and lobulated. In the younger child iron and arsenic were exhibited without any benefit, and quinine had little or no effect on the fever. The authors discuss the etiology of the disease, which they attribute to "an auto-intoxication of gastro-intestinal origin," but are apparently unacquainted with the more recent work of Dr. William Hunter, from whose earlier work they quote. They discuss the rarity of pernicious anæmia in childhood, and venture on a hypothesis connecting these fatal cases with other cases of severe anæmia in childhood not due to diarrhœa or imperfect feeding, cases in which there is anæmia without wasting associated (as they believe) with abnormal fermentations in the stomach or intestines, and often primarily dependent on dilatation of the stomach produced by over-feeding. Their hypothesis is that these cases really belong to the same category as the pernicious anæmia of adults, and that the reason why the anæmia so rarely becomes truly pernicious is that the hæmatopoietic activity, of the bone marrow especially, is so much greater and more intense in infancy and early childhood than during adult age.—*British Medical Journal.*

Antisepsis in Midwifery.—In the section of Obstetrics of the recent International Medical Congress, a paper by Dr. Galabin upon the use of antiseptics in midwifery was read. The excellent results of antisepsis in obstetric practice are ascribed by this author chiefly to the use of corrosive sublimate as a disinfectant for the hands, and for the purpose of irrigating the vagina both before and after labor. The rate of mortality in English maternities since the introduction of corrosive sublimate has fallen from 10 per 1000, to 2 per 1000. In the London General Maternity the patients are confined on horsehair that are disinfected should the case become septic. For vaginal

irrigation a 1-to-2000 sublimate solution is used for two or three days, and after that a weaker solution. Before an examination, the hands are disinfected with a 1-to-1000 sublimate solution and lubricated with a 1-to-1000 solution of sublimate in glycerin. In normal cases in private practice he thinks a single injection of 1-to-2000 sublimate solution sufficient.

Slawjanski, of St. Petersburg, said that in Russian maternities antisepsis is universally employed and has reduced maternal mortality to 0.28 per cent., and that if the method is properly carried out the presence of students has no effect upon the mortality.

Priestly, of London, ascribed the good results of antisepsis in obstetric practice less to the antiseptics used than to the extreme cleanliness. He believed that sublimate solutions as weak as even 1-to-4000 could produce harmful effect.—*American Jour. of Obstetrics*, September, 1890.

Imperative Ideas Bordering on Insane Delusion.—At the recent meeting of the British Medical Association, Dr. Hack Tuke, speaking upon this subject before the section of Psychology, said that there are persons haunted by imperative thoughts and ideas who are not insane, being painfully conscious of the nature of such thoughts. He first described the case of Dr. Johnson, whose imperative idea led to an innocent motor act not of a distressing character. The second case reported was that of a law-student, who worried himself continually in his reading as to the proper place the negative should occupy in a sentence, which imperative idea or obsession seriously interfered with his studies. In the third case a lady could perform very few actions in life without first counting a certain number of times, rendering her life miserable. In a fourth case, a lady evinced great disgust whenever she met with particular words in her reading. It was possible to trace this idiosyncrasy to her aversion to a gentleman whose name contained the same letters. She also developed the dread of contamination, to which French alienists give the name of *folie du toucher*. Dr. Tuke pointed out that there was in some people an irresistible tendency to

touch, and in others not to touch certain articles of furniture or certain dresses. Imperative ideas frequently occur in persons with marked insane inheritance, though a neuropathic disposition is not a necessary factor. Characteristic of all these cases is the bondage under which the person lies to pursue a certain trivial or disagreeable line of thought, being at the same time sane in other respects. Such mental conditions can generally be traced to an emotional basis. The prognosis is not as a rule favorable, but although the particular obsession may not be gotten rid of, the person may pass for being sane in the society in which he moves. The treatment is chiefly moral; occupation of the mind is very important, and care should be taken not to combat directly the imperative idea.—*British Medical Journal.*

Guaiacum as a Purgative. (By Dr. Wm. Murrell.)—In our thirst for new remedies there seems to be a danger that some of our good old-fashioned drugs may be forgotten. Take guaiacum for example. In most of our text-books on materia medica we are told that guaiacum resin acts as "a stimulant, diaphoretic, and diuretic." I cannot find that there is much evidence in support of this view. Wood, of Philadelphia, seems to be of the same opinion, for he says: "Guaiacum is believed by some to act as a diaphoretic, and to do good by increasing the elimination of the skin, but as I have not been able to obtain either from medical literature or from the exhibition of the medicine any distinctive proof of its having any such action to any marked extent I have preferred to consider the drug as an alterative." Schmiedeberg, of Strasburg, curiously enough deals with it under the head of "Drugs and preparations used for all sorts of purposes but now mostly antiquated and obsolete." I am inclined to think that its main action is as a laxative or purgative, and this view is evidently shared by Dr. C. D. F. Phillips, who, in his well known work on the "Vegetable Kingdom," states that in large doses it produces "dryness in the mouth, burning in the throat, a sensation of heat in the stomach, loss of appetite, heartburn, flatulence, nausea, vomiting, and purging." My attention was drawn to the subject some

two years ago by casually prescribing for a city man suffering from rheumatism some guaiacum lozenges made up with black currant paste. He continued taking them long after the pains had ceased, and his explanation was that they did him good by acting on the liver and bowels. He said that one or two of the lozenges taken in the morning before breakfast acted promptly and without inconvenience. I ordered the lozenges for other of my patients suffering from constipation, and what is conventionally called "biliousness," and the result was equally satisfactory. The lozenges not being available for hospital use I had a confection prepared containing ten grains of guaiac resin to a drachm of honey. This was curiously popular with the patients, and for the last two years I have used it extensively not only as a purgative, but in the treatment of chronic rheumatism, sciatica, tonsillitis, dysmenorrhœa, and allied affections. The confection is nasty, but is appreciated by patients. At first I gave it in drachm-doses once a day, but they were not satisfied with this, and I had to increase the dose to two drachms three times a day. In this quantity it seems capable of producing the maximum of inconvenience and discomfort, and gives unlimited satisfaction. The purgative effect is very pronounced, and in one case the patient had fifty-six evacuations in the week. In another case it produced a well marked rash, covering the arms and legs with an eruption which forcibly reminded one of copaiba. That this rash is rare may be gathered from the fact that my colleague, Dr. C. T. Fox, had seen only one similar instance. It was accompanied by intense itching, which disappeared on discontinuing the drug. The guaiacum not infrequently gives rise to a burning sensation in the throat, and to obviate this I prescribed the ten grains of the resin in half an ounce of extract of malt, which answered admirably. This method of treatment is, perhaps, simply a return to the old-fashioned "Chelsea Pensioner," which consisted of guaiacum, rhubarb, ginger, sulphur, and certain other ingredients, but it is interesting nevertheless. I am sure that a trial of the guaiacum resin as a laxative or purgative according to the dose employed will be found satisfactory. It is possible that if the drug were triturated with

cream of tartar, sugar of milk, or some other equally inert substance, its efficacy would be increased, and it would produce the desired effect in smaller doses.—*Medical Press and Circular*, Nov. 5, 1890.

Anodyne Effects of Electric Light.—Stein, of Moscow, records (*Meditziniskoië Obozrenië*) a series of fourteen cases of various painful affections in which he used electric light as an anodyne, with almost "magical" results. The apparatus (devised by himself) used for the purpose consisted of a small-sized (three or four volts) incandescent electric lamp, furnished with a suitable handle and a funnel-shaped reflector, varying from 3.5 to 6 centimetres in length and from 2 to 3 in the longest diameter, the lamp being fixed within the reflector. In cases where the head or neck was affected, the illumination (the reflector being applied directly to the painful area) lasted from ten to fifteen seconds; in other regions of the body from one to five minutes, or even longer, until the patient began to complain of intense heat. The anodyne effects are said to have been invariably most striking. A woman, suffering from very obstinate intercostal neuralgia, after a single sitting (a series of illuminations, each of a few seconds' duration) was completely and permanently freed from pain. The same result was obtained in another patient suffering from intense rheumatic pains about the shoulder. In a woman, aged 50, suffering from agonizing lumbago, four sittings of five minutes' duration twice a day proved equally successful. In another patient, a nervous woman who had had excruciating pain about the right foot and ankle, causing lameness, two illuminations of five minutes' duration caused complete cessation of the symptoms. In a patient suffering from pulmonary and laryngeal tuberculosis, and most troublesome, almost incessant, cough, in whom even morphine in the daily dose of one grain had afforded but trifling relief, from ten to fifteen seconds' illumination of the larynx and both sides of the neck externally, repeated every other day, reduced the paroxysms of coughing to two or three in the twenty-four hours. —*British Medical Journal.*

Modern Dietetics.—There is a curious lack of system, and consequently of uniformity, in the rules which guide medical men in their advice on the matter of diet, whether for the healthy or the afflicted. The present method of dieting athletes offers a singular and striking contrast to that which obtained only a few years since, and it is open to question whether we have yet solved the problem how to get the maximum of vital energy with the utmost economy of expenditure on internal arrangements. Still more striking are the vagaries of medical men in arranging the diet of invalids. They are tolerably agreed now-a-days as to the diet of fevers, for the simple reason that the diet is then reduced to its most simple expression. When, however, it comes to advising persons who suffer from inconvenience rather than ill-health, their inconsistency becomes rather too apparent, and patients are never weary of relating the advantages they have derived from deliberate evasion of the instructions laid down for their guidance, this tendency to insubordination being fostered by the contradictory views of different practitioners. It is possible that we do not take a sufficiently broad grasp of the subject. It is true that the dietetic habits of civilized peoples differ from those of men and animals *ferœ naturœ*, but we are warranted in concluding that these have grown up in deference to altered requirements and in response to special needs. The habits are none the less natural because they have undergone development. Civilization itself is only a branch of natural history, and not a departure from Nature. We cannot, indeed, depart from Nature's laws. They are immutable and relentless, and if these customs in the aggregate have not been found inconsistent with health, strength and progress in respect of the race, we may be sure that they are the outcome of a process of evolution by which man adapts himself to altered conditions of environment. At the same time, the formation of habits and the engrossing nature of one's preoccupations in the worry and turmoil of civilized existence, tend to impede that gradual adjustment which is indispensable if the functions are to be adequately fulfilled.

As age advances digestion and assimilation are on the wane,

and the quantity and quality of the diet require to be modified accordingly. The duty of the practitioner is to aid in this adjustment, while bearing in mind the general rules of the national dietary. Too often his edicts are as whimsical as they are arbitrary, and he does not avail himself to the extent he might do of the indications afforded by the patient's own feelings in the matter. The palate, as Sir William Roberts recently pointed out, is a kind of dietetic conscience, and, in most cases, is a tolerably safe guide to the requirements of the patient. Many people seem to regard its utterances as open to suspicion, but, though not infallible, these utterances are entitled to the utmost deference as those of the rightful authority in the choice of food. Of course there are such things as perverted functions, and the sense of taste is liable to aberrations of the kind which are manifested by its fellows. It is for the skilful practitioner to distinguish the normal from the perverted functions, and thus to aid in neutralizing the evil promptings of the latter. A vast amount of good may often be achieved by simply providing for a change of dietary, and the change may bear either on the articles of food or on the time and manner in which they are to be taken. A good deal of this is known and acted on by the wary practitioner, but a more general recognition of the beneficial effects which may follow apparently slight modifications would spare patients many a vexatious restriction. Then, again, when a given article of diet appears to disagree, the undesirable effects may be obviated by lessening the quantity instead of prohibiting it altogether. Sir William Roberts incidentally raised the question as to whether tea, coffee, and tobacco are properly to be looked upon in the light of luxuries, and he concludes that had they been this and nothing more they would never have attained their present vogue. How far this may be the case we have no means of knowing, but it occurs to us that the general rule here formulated is not one that can be commended for universal adoption, unless we are to accept the views of a physiological Pangloss that all is for the best in the best of worlds. Everyday experience seems to point to a certain amount of what Mark Twain would have called physiological "cussedness" in

mankind, and we do not feel justified in assuming that whatever is, is right. This is rather fortunate from a selfish professional point of view, for if physiological laws had free play, the process of adjustment would go on *pari passu* with the requirements of the organism, and the poor practitioner would have no voice in the matter. This, Providence evidently never intended to be the case, and our *rôle* is to modify general laws to individual cases with as little volence to inherited or acquired instincts or habits as may be practicable.—*Hospital Gazette.*

Operations upon Paralytic Joints.—Dr. Karenski, referring to the operation of Albert (arthrodesis) in which the object is sought to produce anchylosis of the knee-joint in order that the lower extremity may become a support for the body, instead of a hindrance to locomotion, in cases of "dangle-leg" from paralysis, states that the opinion is generally endorsed that if the function of the muscular apparatus attached to the joint is not restored in from six to nine months the condition may be considered a permanent one. In view of this, interference, with a view of fixing the joint and thereby restoring, in some degree, its usefulness, by means of Albert's operation, is to be considered a justifiable one. While in the case of the lower extremity the limb can be restored to a condition of comparative usefulness by means of apparatus for facilitating locomotion, and, therefore, the operation may not be deemed one of absolute necessity, in the upper the case is quite different. Here the muscles of the shoulder proper being paralyzed, the entire upper extremity becomes completely useless, albeit the muscles which move the forearm still possess their function. By the aid of the pectoralis major and lattissimus dorsi muscles, certain movements of the arm can be performed, but only in a slinging or jerky manner, but by fixing the humerus to the shoulder-blade by an arthrodesis at the shoulder-joint, proper adduction and abduction movements of the arm may be obtained, and by means of the scapula the arm may be held in position. In the case of the elbow-joint this operation is only to be recommended when there exists absolutely no power of flexing the forearm upon the arm. The operation heretofore has been most frequently performed upon the knee and ankle-joint.—*Deutsch. Med. Wochenschrift; Annals of Surgery*, Nov., 1890.

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KOCH'S TREATMENT OF TUBERCULOSIS.

Through the enterprise of the *Medical News* we are enabled to give our readers an account of the details of Koch's method of treating tuberculosis. The discoverer of the tubercle bacillus has followed up his beneficent work by what appears to be a much greater discovery—the finding of an antidote.

Tuberculosis is such a widespread affection, and enters so largely into the causation of human misery and premature death that any means likely to limit its dire results will be universally hailed with joy and gladness by the many thousands that are suffering or are likely to suffer from it. Although the details of the mode of administration of the antidote are given, its composition and method of preparation will not be made public until such time as the discoverer has worked out the entire subject.

Koch is universally recognized as the most careful of experimenters, and has never been known to have claimed for his investigations anything but what was subsequently completely substantiated. This personal record is the cause of the very generally expressed confidence indulged in by the members of our profession towards this his latest work.

For centuries cures for consumption have been periodically proclaimed as being found out, and even in the recollection of many men now living, and especially since the discovery of the bacillus, several infallible antidotes to the poison of this disease have been made known. All, however, have proved futile to arrest the progress of the disease.

Koch's remedy appears to be a poison to the tissues which

have become tubercularized, rather than to the bacillus itself. The more extensive the tubercular process, the greater is the reaction from the introduction of the antidote. On the other hand, the more limited the process, the less is the reaction. It follows that it is not only valuable as an antidote, but also a test of the quantity of tissue which is at the time the seat of the tubercular process.

Koch has not made known the different steps by which he was led to the discovery of his antidote. When the time arrives for him to tell this story, it will be most instructive and of far-reaching application.

THE RELATION OF CHOREA TO RHEUMATISM AND HEART DISEASE.

The relation of chorea to rheumatism and heart disease has always been a subject on which very divergent views have been entertained. The great frequency with which endocarditis is found in fatal chorea makes the theory originally advanced by Kirkes, that the disease is caused by emboli blocking the arterioles of the motor centres, at first sight a very plausible one. That this is the explanation of the mode of origin of a few cases of chorea is probable, but it certainly cannot be the cause of the great majority of cases, for we find that chorea generally sets in without any previous endocordial inflammation.

A recent writer (P. Meyer in the *Berliner Klin. Wochen.*) gives an account of 121 cases of chorea treated in Henoch's klinik during the past five years. In 9 per cent. of the 121 cases there was a history of rheumatic symptoms, and in 10 per cent. heart disease without any rheumatic symptoms was made out. In 2 per cent. of the cases both heart disease and rheumatism were present. From these statistics Meyer concludes that chorea is merely a symptom which can be induced by the most varied causes. This, however, is only a partial representation of this subject. Any hypothesis which does not take into consideration the functional predisposition to chorea cannot be accepted as adequate to explain its nature. This functional

predisposition is necesarily always present. It essentially consists in the want of a due stability in certain motor areas. It is the element in chorea that is inherited, and without which the disease cannot be brought about. It is true that it is possible to have an acquired instability of certain cortical aress, as the result of many diverse injurious influences.

Given this instability of the motor cortex, the causes that may induce choreic movements are very various. In one case it may be simple emotion, in another any internal or external poisonous agent. In the latter class we include the poison of rheumatism. This poison, then, induces not only this disease, but the chorea and endocarditis. There are no grounds for entertaining the opinion sometimes expressed that chorea causes endocarditis. When the three diseases appear in the one case, it is more than probable that they are induced by some poison, either the rheumatic or allied poison, and in such cases the proper treatment is the treatment of the rheumatic state.

APOPLECTIFORM NEURITIS.

Several cases of what has been designated with the name of *Apoplectiform Neuritis* have recently been published. In all, the disease was confined to the brachial plexus and was characterized by very sudden and profound loss of motion and sensation in the arm. Rapid wasting of the muscles followed, and the electrical reactions were those of degeneration.

Dejerine has recently published a case where death occurred from pulmonary tuberculosis, and where the examination of the nerves of the plexus revealed the presence of an old hemorrhage into the plexus. This fully accounts for the apoplectiform mode of onset, and is instructive, as showing that we may have a hemorrhage into the peripheral as well as into the central nervous system.

Obituary.

Dr. Henry Jacob Bigelow, of Boston, died on Oct. 30th, at the advanced age of seventy years. Dr. Bigelow retired from practice a few years ago. He occupied for many years the chair of surgery in the medical department of the University of Harvard, and was a noted teacher and original thinker. He will be especially remembered for the important advances contributed to lithotrity.

Prof. Nussbaum of Munich, one of the greatest of German surgeons, has passed away, full of years and honors. He was among the first in Germany, if not in the world, to recognize the value of Lister's work in the treatment of wounds. He quickly put it into practice, and with such brilliant results, that very soon it became almost universally employed throughout Germany. Nussbaum was not only a great surgeon, but was also, like Lister, an earnest and able physiological investigator. In fact, both of these great men would have left their mark in science even if they had never turned their attention to surgery.

Albert Vogel.—The University of Munich has lost another able teacher through the death of Albert Vogel. His work on Diseases of Children is a standard treatise in a number of languages, and is at the present time being published for the eleventh time.

Medical Items.

—Dr. Kuster, of Berlin, has been appointed Professor of Surgery in the University of Marburg.

—Prof. Schrötter has been appointed Director of the Third Medical Clinic recently established in the University of Vienna.

—A new edition of Neale's "Medical Digest" will shortly be issued. This work is one of great value, especially to the busy general practitioner, for whom it was originally designed.

—Dr. Orton, President of the New York State Medical Association, has offered a prize of $100 for the best short, popular essay on some subject connected with practical sanitation.

—Dr. Francis R. Japp, Assistant Professor of Chemistry in the Normal School of Science and Royal School of Mines, South Kensington, has been appointed Professor of Chemistry in the University of Aberdeen.

—The chair of Materia Medica and Therapeutics in the Jefferson Medical College has been rendered vacant by the retirement of Dr. Bartholow. We regret to learn that Dr. Bartholow's failing health is the cause of his retirement.

—The result of the operation of the Medical Practice Acts in Minnesota since their introduction seven years ago has been to reduce the ratio of physicians to the general population from 1 in 650 to 1 in 1250.

—In our last number we published a list of Dr. Mills' more important contributions to science. We should have mentioned that the list was prepared in order to prove Dr. Mills' claim to be appointed a Fellow of the Royal Society of Canada. This Society may have greatness in it, but it has not, as yet, evolved from the potential state.

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Original Communications.

SOME CARDIAC PHENOMENA OBSERVED IN TYPHOID FEVER.*

BY ROBERT E. MCKECHNIE, M.D.,
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Mr. President and Gentlemen:—Through the kindness of Dr. MacDonnell, I am permitted to bring before your notice the two following cases, which were admitted into his wards in the Montreal General Hospital, and so came under my immediate observation as his House Physician. They are two cases of typhoid fever, which would be classed as mild and uninteresting, were it not for certain cardiac phenomena which they presented.

Their histories are as follows:—

CASE I.—Mary M., aged 23, a servant, came into hospital on the 7th day of her illness. With the exception of an attack of smallpox at 2 years of age, she had always enjoyed good health.

On admission, her temperature was 102°; pulse, 100; and respirations, 28. Examination of lungs and heart yielded negative results. The abdomen was tumid with marked tenderness, with gurgling in the right iliac fossa. No typhoid spots were seen and the spleen was not enlarged.

On the 11th day of the fever, typhoid spots appeared. There was no tympanites, and bowels moved only by enemata.

Up to the 18th day the case progressed favorably; the temperature for the previous week rarely going above 102°; the bowels still moving only by enemata; and there being no tympanites or excessive abdominal pain.

* Read before the Medico-Chirurgical Society of Montreal.

On this 18th day, at 6 a.m., the nurse took the temperature as usual, and found it 100°. Half an hour later, noting a great change in the patient, the temperature was again taken and found to be but 98°. The patient was then extremely pale, as though blanched by a hæmorrhage; the pulse about 150 and very weak; the face and extremities cold, and bathed by a profuse cold perspiration. Hæmorrhage being at once thought of, the usual remedies were applied.

By noon the extremities were warmer, and the pulse, although still weak and fast, somewhat stronger.

From this time on to the 28th day (ten days), the patient steadily grew stronger; a slight degree of color returned to the cheeks; appetite was returning, and the temperature had been normal for five days.

The bowels still moved only by enemata, and a close watch was kept on the stools for signs of hæmorrhage; but none appeared, although three large motions had been passed in the interval.

But on this 28th day a fresh syncopal attack occurred. At 7.30 p.m., just after having been made comfortable in bed for the night, which process necessitated a certain amount of disturbance to the patient, she again became suddenly faint, very pale, broke out into a profuse perspiration, and pulse became rapid and feeble. In fact, the pulse was so feeble that the stethescope was applied over the heart to get the rate. There was then heard over the left ventricle, at the apex, and propagated into the axilla, a loud blowing systolic murmur. Examination failed to find any cardiac enlargement.

Hot applications were applied and stimulants ordered.

Two days afterwards she was much stronger. The murmur, as above noted, still persisted, and in addition a loud systolic murmur was heard at the aortic cartilage, propagated upwards along the vessels of the neck, and also heard across the upper part of the chest, from the aortic cartilage to the left axilla. A slight trace of blood was seen in a stool passed this day, which was the only blood passed throughout the case.

Ten days afterwards the patient had so advanced in convalescence that she was out of bed every afternoon. At this time the murmur could not be heard at the apex at all.

A week later, two days before her discharge, the note in the

case book reads: "The murmur is heard with difficulty at the aortic cartilage, and not at all in the axilla or at the apex."

The second case is entirely different to the preceding, but still presents a similar problem to be solved.

CASE II.—Annie M., aged 21; a general servant, lately out from Ireland, was admitted to hospital on the 6th day of the fever.

When a child she had had measles, scarlet fever, chicken pox, and whooping cough; since when she had always had good health. But the past four months she had found herself breathless on exertion; dizzy at times; and troubled with palpitation.

On admission, she was found to be in a good state of nutrition. Her face, the mucous membranes of the mouth, and the surface of the body generally, were very pale. There was visible pulsation of the carotids; and under the finger nails, and through the mucous membrane of the lips, could be seen a capillary pulse. The abdomen was tumid, with no complaint of pain on palpation; the bowels constipated; the tongue of the ordinary typhoid type. No spots were visible. The superficial area of cardiac dulness was enlarged, measuring $3\frac{1}{2}$ inches transversely, with the apex beating $\frac{1}{2}$ inch inside and under the nipple. Over the upper part of the sternum could be heard a systolic blowing murmur, propagated up the neck, and across the upper part of the chest to the left axilla; but not heard at the apex.

The pulse was semi-collapsing, 102 to the minute, regular in volume and rhythm; temperature, 103°; respirations, 24. Examination of lungs found them normal. The liver measured 3 inches vertically in the right mammillary line. The spleen was not enlarged.

Three days later, characteristic typhoid spots began to appear; and the next day the spleen was noted as enlarged. But, on the third day after admission (the 9th of the fever), a faint systolic murmur was heard at the heart's apex. It increased in strength for a day or so, becoming quite marked, and co-existing with the original murmur. This persisted for some days. The first sound of the heart was also almost inaudible. The case ran a favorable course and normal temperature was reached on the 20th day.

On the 26th day, the patient convalescing rapidly, I find this note: "Area of cardiac dulness remains as on admission; the apex also where then found. But the systolic murmur then described as being heard over the upper part of the sternum, across into the axilla, up the neck, and the additional one, discovered three days later, at the apex; now at times cannot be heard at all, sometimes can be heard faintly at the aortic cartilage, sometimes at the apex."

Three weeks later, the patient was still in the hospital, having been detained by an abnormal temperature, which appeared after she had been given solid food. At this date, no trace of a murmur could be heard in any of the areas where it had been formerly heard.

While these two cases are different in many important points, they possess this feature in common, that, there was a progressive development of some cardial affection in each. This was shewn, in the first case, by the presence of a murmur where none existed before and an addition in a few days of another marked murmur. In the second case, a murmur was present when the patient first came under observation, but an additional one was developed during the course of the disease. And in each, as the fever ran its course, these cardiac manifestations became less marked, entirely ceasing in one.

If the two cases cited were not typhoid, the inferences and conclusions to be drawn from them would be erroneous; hence, it will be necessary to briéfly exclude those diseases which might be mistaken for it, especially those with cardiac complications.

Murchison says that "the various manifestations of tuberculosis constitute the maladies most difficult to distinguish from enteric fever." Fagge qualifies this by saying that "miliary tuberculosis of the lungs may be mistaken for typhoid with bronchitis." As there was no pulmonary involvement this can be at once excluded. Spots, closely resembling those found in typhoid, are described as being found in acute tuberculosis; but Murchison met with only one such case. It was diagnosed typhoid and died, the autopsy revealing the error. The strongest proof that our cases were not tuberculosis is, that both recovered. The same fact will exclude ulcerative endocarditis, and pernicious anæmia with febrile symptoms.

On the other hand, we have the strongest proofs that our cases were typhoid, in a sequence of typical symptoms, completed by the finding of the characteristic typhoid spots.

Murchison says: "When after febrile symptoms of about a week's duration, lenticular rose spots appear in successive crops, the diagnosis of enteric fever is certain, whatever be the other symptoms. Two or three characteristic spots will be sufficient."

Acknowledging the cases to be typhoid fever, the question arises, what, then, was the nature of the cardiac phenomena? We have in the production of cardiac murmurs to take account of the factors engaged; namely, of the blood, of the endocardium, of the myocardium, and of the pericardium. There were no symptoms at all suggestive of a pericarditis, nor would such a disease account for the signs found; so we may dismiss a lesion of the pericardium at once.

A hæmic origin of the murmurs is not so easily set aside. In our 2nd case we have a girl of 21, probably a hard-worked servant, very anæmic, and with a history of having suffered from breathlessness, dizziness and palpitation for four months previously. No recent cause had occurred to bring on these symptoms, unless it were an anæmic state. But, there is strong evidence that there was long-standing valvular disease in her case. She had had scarlet fever as well as measles when a child, and it is quite possible that an endocarditis had complicated one of these diseases, leaving permanent damage. Compensation had been good from that time till perhaps four months ago, when she first noticed shortness of breath and palpitation. At this date, also, she left home and went to service, hence hard work may have lessened the perfection of compensation. Or mere anæmia may have given these symptoms irrespective of cardiac disease. At any rate, when the patient came under our observation, she had every evidence of long-standing disease of the aortic valves, in an enlarged heart, with pallor of the surface of the body, pulsation of the vessels in the neck, a capillary pulse, a systolic murmur heard at the aortic cartilage, and propagated up the great vessels of the neck.

If it were not that fresh cardiac symptoms were added to the foregoing, this case would not present the interest it does.

Why an anæmic state of the blood, superadded to the changes which take place in the blood in all fevers, would not especially predispose to the development of cardiac murmurs, without any actual cardiac disease, may well be asked.

According to Bristowe, in his article on Anæmia, "the development of abnormal sounds in the heart and blood vessels, independent of organic lesions, is of common occurrence and highly characteristic, a soft systolic murmur is to be heard freqently over the situation of the aortic and pulmonary valve, and along the course of the ascending arch and innominate artery, occasionally at the apex;" while Fagge, in describing different forms of anæmic murmurs, says: "An anæmic murmur of another kind is systolic in rhythm, and is heard over the heart and main arteries. It is usually loudest at the base, and it often seems to be traceable along the pulmonary artery, rather than along the aorta. . . . . Whether an anæmic murmur is ever localized at the apex, I am not sure. . . . . The basic systolic murmur often has a rough, harsh quality, suggestive of anything rather than a functional origin."

Fagge, therefore, doubts an anæmic murmur ever being localized at the apex. But in both our cases this occurred. In this 2nd case which we have been discussing, the murmur was developed under observation, and the characters of it suggested regurgitation, rather than that it had a hæmic origin. In the 1st case, the onset of the cardiac manifestations was too sudden to be from a hæmic cause. In both cases, the distribution of the murmurs, together with their intensity of sound, pointed to an incompetency of the valves from some cause. "For an anæmic murmur is usually loudest at the base, and it often seems to be traceable along the pulmonary artery rather than along the aorta." So, while anæmia itself cannot be excluded from the cases, it of itself is not sufficient to account for the collapse in the one case, or the physical signs in either.

That an endocarditis may have been the cause also needs investigation. It is a complication which may be looked for in any of the specific fevers, and slight degrees of it are found in typhoid oftener than commonly supposed. Jenner noted it in three cases out of sixteen, while, according to Hoffman, the endocardium is often opaque and thickened, owing to a fatty degeneration of its lining epithelium; and in several instances

he found recent endocarditis, with vegetations on the aortic and mitral valves.

Bristowe says a subject of endocarditis remains liable to fresh attacks of the inflammation, and there is every probability to suppose that Case 2 was a former subject of endocarditis. I think there is some proof, that not only were the aortic valves then affected, but also the mitral, for a contracted liver of three inches vertical dulness was noted, which would be accounted for by chronic mitral incompetency. If this be the correct view, then compensation had later on improved, so as to be about perfect, but was again lost during the course of the fever to an appreciable extent, and regained as convalescence advanced. The cause of this slight loss of compensation and recovery will be discussed later on, and is not an endocarditis.

But endocarditis cannot be thus easily dismissed, for certain points are strongly in its favor. Thus Bristowe says: "If in the progress of any one of those diseases of which endocarditis is a common complication, we detect a cardiac murmur which had not previously existed; or if further observation proves this to be a permanent phenomenon; or if changes in it indicative of increasing mischief take place; or if additional murmurs become developed, we cannot reasonably doubt that endocarditis is present." And as further support he says: "We must not forget that direct murmurs due to granulations occasionally disappear."

Now, in regard to these statements, we must note that Bristowe speaks of those diseases in which endocarditis is a common complication, which statement lessens the value of the observation when we try to apply it to typhoid; for endocarditis is not a common complication of it. Bristowe, in making this statement, was carefully weighing evidences and probabilities. which were of value only in the class of cases he was thinking of, so that having taken typhoid out of that class, the probabilities of endocarditis being present are reduced, unless new evidence is forthcoming.

The fact that our murmurs lessened and disappeared is, of course, not at all contrary to the view that endocarditis was their cause; but the fact that they lessened and disappeared coincidently with the return of strength, as convalescence advanced, strongly suggests another cause, which either will

account for the phenomena under discussion, or will act as a factor, in conjunction with the causes already discussed, to account for them. This is disease of the myocardium.

Degeneration of the muscle cells of the heart walls is common to many different fevers. According to Murchison, "Louis found marked softening, sometimes associated with thinning of the walls, in 15 out of 47 cases of typhoid. Jenner found the heart soft and flabby in 6 out of 11 cases; . . . and Hoffman has found either waxy or granular degeneration of the muscular tissue of the heart in 103 out of 159 cases."

Hutchinson, in Pepper's System, observes that "the heart, in common with the other muscles of the body, suffers from both forms of degeneration, but the granular form appears to be more common than the waxy. In protracted cases it is usually much softened. . . . Upon minute examination, the degeneration is found to have taken place in patches, the diseased fibres being found alongside of others which have scarcely undergone any alteration. These patches are especially common in the papillary muscles of the mitral valve, a fact which explains the occasional presence of systolic murmurs in typhoid fever."

In another place he also says: "Degeneration of the muscular tissue of the heart is probably present in some degree in every case of typhoid fever, being, of course, most marked in the severest cases."

From the foregoing, it is evident that a weakening of the cardiac wall must be looked for in every case of typhoid, and is a factor too important to be overlooked in hunting for an explanation of the signs found in our cases. That we have evidence that this parenchymatous degeneration may occur early in the disease, is seen in the tremors of the tongue, an early observable fact. These tremors, according to Fagge, are due to this cause.

Now, anæmia itself is a common cause of parenchymatous degeneration of the muscle wall of the heart, and may lead to so much weakening, with dilatation, as to give cardiac murmurs which are not hæmic. Both our cases were anæmic on admission, hard-worked servants. So we have a two-fold reason for supposing the heart-walls weakened, fever and anæmia.

According to Osler, "impaired nutrition of the heart-walls, from degeneration or inflammation, may lead to such a diminution of the resisting power that dilatation readily occurs. In fevers, the loss of tone due to parenchymatous degeneration or myocarditis, may lead to a condition of acute dilatation which may prove fatal. It is a well recognized cause of death in scarlatinal dropsy, and may occur in rheumatic fever, typhus, typhoid, erysipelas, etc. . . . In anæmia, leukæmia and chlorosis, the dilatation of the chambers may be considerable. . . . Under any of these circumstances, the walls may yield with normal blood pressure, or if increased tension is present, the effect is the more readily produced."

Again, he says: "Dilatation with thinning is often the result of an acute process met with in the fevers. . . . The auriculo-ventricular rings are often dilated, and there may be an inch and a half, or even two inches, of increase in circumference. . . . Great dilatation is always accompanied with relative incompetence of the valves, so that free regurgitation into the auricles is permitted."

And again: "In anæmia and fevers the temporary dilatation may undoubtedly pass away with the improvement of health."

In connection with weakening of the cardiac walls, an important sign is a feeble or imperceptible first sound. This is found in all forms of weak heart, the fatty, as well as that the subject of febrile degeneration. In our 2nd case this sign was marked; but I find no note in the case book on this point in reference to Case 1.

The presence of an apex murmur, also, may be a proof that there were weakened cardiac walls with some dilatation. To quote from Loomis' article in Pepper's System: "Mitral regurgitation may occur independent of valvular disease, from displacement of one or more of the segments of the valve, the result of changes in the papillary muscles, chordæ tendineæ or the ventricular walls. It may also occur in extreme anæmia, or from relaxations of the papillary muscles, etc." In another place he says: "It may occur in conditions of extreme anæmia, or where there is degeneration of the walls of the left ventricle."

Returning to our two cases, there is no need to try to adapt our explanation to fit these two, merely because one ward con-

tained them at the same time. I do not think a single explanation would satisfy the symptoms noted. So, with the foregoing extracts, culled from various sources, we are in a position to attempt to clear up the subject. In Case 2, my opinion is, that a previously anæmic condition coupled with the degenerating influences of the fever, led to an early weakening of the heart wall. The fact that as convalescence advanced, both aortic and mitral murmurs disappeared, leads one to judge that before her illness, when she was strong, there were no murmurs; and that, even before admission, a gradual dilatation of the left cavity of the heart had begun, shewing itself in disclosing a long hidden aortic lesion. In a few days more the cusps of the mitral valve allowed regurgitation from a continuation of the same process. This idea is merely the reverse of what is seen in most cases of endocarditis, as in rheumatism; for there is weakening of the myocardium in it, as in all fevers. In it, as convalescence progresses, the murmurs are reduced in intensity, and often disappear entirely, long before the soft granulations of the valves could have been altered by cicatrical changes. If, then, the restoration of tone to the ventricular wall does in many cases lessen or cause to disappear murmurs due to valvular lesions, then, in the present case, a loss of tone in the ventricular wall of a heart with valvular lesions can cause to re-appear murmurs which formerly existed. And as proof that this is the rational explanation, we find, as convalescence advanced, as tone returned, the murmurs vanished.

Such is my explanatiou of the cardiac phenomena observed in Case 2; but we will have to look elsewhere for the causes at work in Case 1.

In an hypertrophied heart, as in Case 2, slight dilatation could occur sufficient, perhaps, to allow of the re-appearance of former murmurs; and yet, the dilatation be not readily made out by the Clinician, unless specially watching this one point. But in Case 1, with a heart of normal size on admission, with no evidence of organic disease, dilatation sufficient to cause regurgitation would so enlarge the cardiac area of superficial dulness as to be easily recognizable. But the notes of the case say distinctly that there was no enlargement of the heart at any time during the course of the illness.

Nor could dilatation account for the systolic aortic murmur. An enlargement of the aortic orifice would lessen instead of increase the resistance to the passage onward of the blood. The cause of this murmur must then be either hæmic or endocardial.

Loomis, in differentiating murmurs due to lesion of the aortic valves, from hæmic murmurs heard in somewhat the same areas, says: "Anæmia produces a murmur that is heard loudest in the carotids and is accompanied by a venous hum. In aortic disease, the murmur has its maximum intensity at the second sterno-costal articulation of the right side and is not accompanied by a venous hum." In this case the point of maximum intensity was at the aortic cartilage, and there was no venous hum, although it had been especially looked for.

I found several references to systolic apex murmurs being met with in fevers; but Loomis, while speaking of these, says: "There are no symptoms of obstruction present with febrile murmurs, while they are frequently present in endocarditis." Thus, he would at once exclude an aortic systolic, which is an obstructive murmur, from the febrile class. Nothing remains, then, but to acknowledge endocarditis as the cause, and if so, then the mitral murmur first heard must also be from the same. We have, then, a case of endocarditis in typhoid, following the usual course, attacking first the mitral valves, and a few days later the aortic.

What reference this endocarditis had to the symptoms of collapse, described as having been seen on the 18th day of the fever, and a second time on the 28th day, needs inquiring into.

We can imagine a myocardial cause at work, which would so weaken the cardiac walls as to cause a muscular incompetency. But such a state would declare itself by dilatation of the organ, which we know did not occur; and also by embarrassment of the pulmonary circulation. But this, too, was looked for and not found. If the heart were the organ mainly at fault, we would have found proof by physical signs. The valvular lesion could not have been the cause any more than a muscular incompetency, for it also would have shewn itself by engorgement of the pulmonary circulation

Where, then, was the greater part of the blood? It was not

in the cutaneous structures or the extremities, as evinced by the extreme pallor and coldness of surface. It was not in the bowel, where it had been diagnosed to be, for the stools proved the negative. It was not in the chest, for the heart had too little blood for the needs of the circulation, and the lungs were not engorged. It must, then, have been stagnating in the dilated veins of the splanchnic area, which area is capacious enough to hold all the blood in the body.

Bristowe, in discussing collapse, accounts for the depression of temperature, as far as regards the face, limbs and other exposed parts, by the comparative failure of circulation in them. "But," he says, "that this is not the sole cause of that depression is obvious from the fact that the internal temperature, instead of rising, as under such circumstances it should normally do, itself tends to diminish, and sometimes diminishes rapidly. It is clear, indeed, that there is throughout the organism a more or less complete arrest of those disintegrating processes upon which the maintenance of the temperature of the body depends, and presumably also, a more or less complete arrest of those vital processes, with which these latter are intimately interwoven."

That he considers this due to nervous action is plain, from his concluding paragraph on this subject.

"We have pointed out the not infrequent dependence of collapse or syncope on affections of the mind, and on many other conditions, which can be operative only through the medium of the nervous system; and we have enumerated the various phenomena referrible to the nervous system, which attend and characterise a large proportion of cases. These facts are sufficiently suggestive. But when we look a little more closely into the matter, and consider how many different causes of different operation, equally produce the same collective phenomena of collapse; how rapidly these phenomena come on, and how universally the organism is affected by them; how impossible it seems that a smash of the leg, a perforation of the bowel, or an agony of terror, should directly arrest the chemical changes going on throughout the organism, and so reduce the temperature of the body, or should directly influence the action of the heart and arteries; it is impossible to doubt (what many other considerations tend to prove), that all the phe-

nomena of collapse are directly traceable to the operation of the nervous system, not, however, of the brain or cord, but of that department, namely, the sympathetic, which presides over circulation, nutrition and the functions of the various organs, including those of the brain itself."

In the case under observation, we have no crushed leg or violent emotion to give the initiative impulse to the sympathetic system; but we have in typhoid a lesion, of that area most richly supplied by the sympathetic, an ulcerative process in the intestine, a reflex of whose irritation is the factor looked for.

In the *Lancet* of 1880 I found a short article on "Sudden Death in Typhoid Fever." The author says: "The occurrence of sudden death in typhoid fever, without any hæmorrhage or perforation to explain it, has been variously accounted for. According to Dieulafoy, it is always due to syncope, a reflex result of the intestinal lesion."

Thus I account for the collapse observed in Case 1. It was due to a reflex of the intestinal lesion, acting through the sympathetic nerves and manifesting itself by a dilatation of the veins in the splanchnic area. The withdrawal of a large quantity of blood from the general circulation, or the stagnating of it in this manner would produce the same constitutional effect as an actual hæmorrhage, namely, collapse.

INFLUENZA IN ITS RELATION TO EYE DISEASE.*

By J. W. Stirling, M.B., &c.

While even yet the exact etiology of the influenza is enveloped in doubt, it cannot but be of import to study its action on the different organs of the body, altering their functions, setting up certain diseases, or modifying the course of diseases already existing.

Whether in *la grippe* one has to do with a special pathogenic organism or a miasmatic infection is an open question. In Symes Thompson's late work on the subject, Rollo Russell's theory of its origin is dilated on; it is entertaining in respect of its novelty and far-drawnness. The theory is: That the contagium of *grippe* is air borne, and originates in those districts of China devastated by floods in 1888. The deposit of alluvial soil thus silted up, not being secured by vegetation, upon being dried by the sun, was carried as dust into the air by the summer winds, in such clouds as to obscure the landscape and almost hide the sun. Dr. Thompson considers this dust might supply the raft to convey the microbe. Hence we would have to thank the celestial and his flowery land for the epidemic of grippe as well as "Ab-Sins" and cheap labour. The theory is pretty, but very unnecessary when we consider that the spread of the disease from one district to another was no quicker than could be accounted for by personal contact or human intercourse.

Of course simultaneously with the grippe's appearance the medical mental system was on the rack until it should discover a bacillus. That it was caused by a germ there could be no doubt from its course. Finally, Fischel of Prague announced at the International Congress held in Berlin that he had discovered a pathogenic micro-organism in the blood of six influenza patients. The intra-venous injection of this into dogs and horses set up a well-marked influenza; and curiously caused interstitial keratitis in two of the dogs, and superficial keratitis in four. This seemed pretty conclusive evidence, but (and there is always a "but" in these experiments) there was one missing

* Read before the Medico-Chirurgical Society of Montreal.

link,—it had not been tried on man. This organism is rapidly destroyed in water, and ceases to grow after eight days in sterilized water. However, all this requires further elucidation and proof.

Now, as to the main subject of my paper—la grippe in its relation to eye and ear diseases—I will first treat of the eye, enumerating cases out of my own practice as well as those I have collected.

With the onset of the attack, or very shortly after, there was, in a great number of the cases, the irritative, watery, pale-red form of conjunctivitis associated with the photophobia and lachrymation. In some few cases the photophobia was lacking.

In passing, I might refresh your memory here by the fact that photophobia is the only example in the body of the transmission of a stimulation from a nerve of common sensation to one of special sense—the V to the optic. This is no reflex in the ordinary sense of the term. The stimulation from the V nerve does not give rise to irritation of the fibres of the optic nerve so as to cause light sensations, but it causes the functional activity of the optic nerve, which is ordinarily painless, to be painful, sometimes intensely so.

The conjunctival hyperæmia and catarrhs appeared to be just part and parcel of the general catarrh of the lachrymal drainage apparatus and of the nose, throat, etc.

Of the cornea, the various lesions observed were interstitial keratitis, interstitial punctate and dendriform, keratitis of Fuchs and pustular keratitis; also ulcers with hypopyou and perforating ulcers.

These must be considered as mainly of neurotrophic origin consequent on the great depression following the onslaught of the grippe and not due to any particular germ.

In a case of my own, as well as in the reported cases, the corneal lesion came on with, or very shortly after, grippe, and in previously sound eyes, so that the causal connection can hardly be doubted. These lesions of the cornea, however, cannot be looked on as directly due to the influenza; but the great vital depression occurring, for instance, in the strumous and those

predisposed to interstitial and other forms of corneal trouble would favour the outbreak of the same. Once the lesions had appeared, they were marked for their obstinacy and resistance to treatment. For instance, in the case of ulcers of the cornea, they either rapidly spread or else remained sluggish, so that all temporizing measures had to be abandoned and active means forthwith adopted.

Another peculiarity of these lesions was a comparative immunity from pain, which is a peculiarity of many neuropathic cases. In one case I had, the cornea seemed simply to necrose without any inflammatory reaction or pain, the lesion tending to spread rather superficially than in depth, and resulting in a marked ectasia of the cornea. This case finally healed well after repeated paracentesis.

Another type of neuropathic lesion was the inflammatory or irritative, as represented by phlyctenulæ and the subsequent superficial vascular ulcer. Here, from defective nutrition and depressed physicial state the V nerve, together with the general nervous system, is in an irritable condition ; from the resulting abnormal nerve stimulation a cell proliferation occurs about the nerve terminals in the cornea, which, partly from rapidity of production and partly from defective nutrition, instead of maturing into proper corneal tissue, breaks down and forms small ulcers. These are often painful from their superficial position, as they expose the nerve terminals in the cornea's outer layers.

These are the main corneal lesions that I have observed, but no doubt almost every form might be observed dependent on the depressed physical and nervous state, resulting either from the irritative or paralytic state of the nervous supply subsequent to the defective nutrition.

Passing on to the iris, many cases of inflammation of the iris and the uveal tract have been recorded, but as a rule they ran a benign course ; and those whioh I handled presented nothing peculiar. However, three severe cases reported by Herschmann, Eversbusch and Natanson are worthy of study, as throwing some light on the etiological connection with the influenza. In both Herschmann's and Eversbusch's cases only one eye was

attacked. The outbreak was on the ninth day of the illness; purulent choroiditis ran a rapid course, resulting in panophthalmitis and perforation of the sclera. In Natanson's case the inflammation of the uveal tract had a much more direful result in that it affected both eyes and led to complete blindness. The patient was a peasant; was attacked by grippe in Nov., 1889, which, after an eight days' duration, left him very weak and with persistent cough and expectoration. Complete recovery did not occur, and on the third week of January, 1890, an acute attack of pneumonia, with pleurisy, developed and ran a prolonged course. About the 4th of March the patient noted a veiling of the sight and floating objects before the eyes; two days later the left eye was completely blind, and on the following day the right eye, both with pain a few days later, the result of a binocular irido-choroiditis, the rapidity pointing evidently to embolism of the choroid vessels. Considering the floating objects and veiling of the visual field (evidently due to vitreous opacities), which occurred at the onset of the ocular trouble, were followed only after several days by pain, it is clear the disease started first in the choroid and spread afterwards to the iris and ciliary body. Eversbusch accentuates in his case the probability of the escape of an embolish into the uveal tract vessels, which explanation was supported in his case by the short interval elapsing since the outbreak of the influenza, namely, nine days. Also the probability of the embolic origin received support from the fact of the simultaneous development of a rapidly-spreading ulcer of the foot, likely also embolic. In Natanson's case, although the eye symptoms did not supervene until four months after the grippe, still, them and the pneumonia he considered as being of embolic origin. He refers to the many bacteriological discoveries in influenza—to the presence of the micro-organisms causing inflammation and suppuration in different localized areas, *e.g.*, streptococcus and staphylococcus in the lung and staphylococcus discovered by Eversbusch in panophthalmitis. He considers that by these one obtains a secure basis for the comprehension of the embolic processes under consideration. Eversbusch even considers the probability of a metastatic origin of the eye complaint not to be too far forced.

In fact there are very few vascular areas in the body which have escaped the inflammation and suppuration during this epidemic ; for example, meninges, brain, ear, eyelids, heart, lungs, pleura, nerve, etc. One can hardly doubt of the bacterial nature of these secondary affections. The fine meshes of the choroid plexuses would especially favor this.

One important point Natanson draws attention to, and that is the great variation in the intensity and extent of these lesions of the uveal tract after " grippe," viz., hyperæmia of the iris, iritis alone or with cyclo-choroiditis, choroiditis, serous, plastic and purulent, with or without accompanying iridocyclitis. These variations present a marked analogy to the corresponding sequelæ of recurrent fever. There is a second condition, also, of marked similarity in the time of occurrence in the cases under consideration. The time varied from nine days to four months after the grippe, whilst just the same occurs after febris recurrens, a few days to several months being the variation.

Next passing on to the optic nerve, a large number of cases of inflammation of the nerve have been reported, passing on to partial or total atrophy. Curiously, nearly all were cases of retrobulbar neuritis, with, at the outset, no fundal change to be seen by the ophthalmoscope, but later, atrophy appearing. Sometimes the lesion was binocular, sometimes uniocular—either total or partial. As no cases have yet come to section, the immediate cause is not known. Very possibly in many a perineuritis ; in some a meningitis accompanied.

Further, glaucoma has been observed in several cases ; the cause of this is not hard to find, if one takes into consideration the mechanism of glaucoma. As we all know, glaucoma is characterized by increased tension of the eye, due to increase of the fluid contents of the eye. It depends on an abnormal condition of the secreting mechanism, the emunctories and, or of, the secretion itself ; the main cause being a hypersecretion into the eye and a defective outflow therefrom.

The drainage channels of the eye are mainly at the angles of the anterior chamber of the eye, by the Schlemm's canal and Fontana's spaces ; there is also a slighter outflow about the optic nerve. Now the blocking of these anterior drains must lead to

retention of the fluids in the interior of the eye and the consequent rise of tension. It occurs in this way. The main secretion into the eye is from the ciliary processes. This passes round the edge of the lens through Petit's canal into the anterior chamber and out by Fontana's spaces and Schlemm's canal. In advanced adults, among whom glaucoma generally occurs, the lens nearly fills Petit's canal, the circumlental space being very small. Now, if from any cause any marked swelling of the ciliary processes occurs, as in straining the eyes, or as in venous congestion due to any depressing agency—*e.g.*, grippe,—the circumlental space becomes blocked, filtration cannot proceed freely from the posterior into the anterior chamber, the pressure behind the lens of the accumulating fluid pushes it forward and with it the iris, which is forced against the cornea, and completely blocks the angle of the anterior chamber. A vicious circle is thus formed.

Remembering this, and considering the great depressing effect of grippe on the vascular system, one can easily see how it would cause venous congestion of the ciliary processes, and in those predisposed to it, the resultant glaucoma. One or two cases of acute inflammatory glaucoma are reported associated with purulent choroiditis. Here the glaucoma would be secondary to the choroiditis, which latter would likely be of embolic origin, on which we have already dilated in speaking of inflammations of the uveal tract. Cases of general panophthalmitis have been reported, evidently secondary to an embolic purulent choroiditis.

Next as to the orbit. Purulent inflammation of the cellular tissue has occurred, evidently of embolic origin, which is not to be wondered at considering the numerous metastatic or embolic cases which have been reported after purulent meningitis or post-partum, etc. Fuchs reports four cases. In one it was of the purulent form, which spread to the interior of the eye and set up suppuration there ; in the pus he discovered the Fränkel-Weichselbaum pneumococcus. The other three cases resolved without going on to pus formation.

The terminal circulation in the lid would favour the lodgment of an embolus, and, true enough, we have several cases of abscess of the lid reported.

Abscess of the lachrymal sac is also to the fore, probably due to inflammation of the mucosa lining it, together with that of the nasal and ocular regions. From the swelling of the mucosa the duct gets plugged, the secretion is retained, irritates still more the surrounding tissue, until an abscess forms.

Lastly, one of the most marked results of the grippe, and, indeed, one of the commonest, is the weakening or paralysis of the muscular apparatus of the eye. Cases have been so numerous that it is superfluous to particularize. It is, of course, noted in the complaints of pain, etc., on reading and writing, due to weakness of the ciliary muscle and of the recti interni, although it is sometimes the externi or other muscles that are at fault. As one would suppose, these symptoms are more marked among "hypermetropes" or astigmatics. Of true paralyses I have not seen any dependent on grippe myself, and the decision as to the cause must be always open to grave doubt, as we have the ocular paralysis in connection with tabes dorsalis often preceding that disease by months and sometimes years.

Now from a resumé, we may infer that the eye symptoms in connection with la grippe may arise in one of three ways:

(1) As in the conjunctival affections, a part and symptom of the primary disease.

(2) Embolic origin, as in the purulent choroiditis, or cellulitis, possibly the neuritis.

(3) From the asthenic condition of the patient; *e.g.*, some of the forms of keratitis, one form of glaucoma, and in the muscular lesions.

We next pass to the ear diseases occurring during the influenza. It was mainly the middle ear which was affected; happily, very rarely the inner.

Almost as far back as these epidemics have been reported, the simultaneous occurrence of acute otitis media has been marked. In 1580 Bœckel noted the occurrence of purulent otitis media in grippe. In 1729–30 Fuster noted otalgia and sanguinolent otorrhœa following grippe; and again in 1732–33, in another epidemic, the same authority notes the occurrence of acute otitis with purulent discharge after influenza. In 1835

Ozanam wrote " that sometimes complications arise which render the disease graver and longer in duration, because to the early symptoms are added in some cases intense earache and swelling in the parotid and glands of the neck ; at last the disease terminates with a discharge of pus from the ear, and sometimes, though rarely, with suppuration of the parotids."

This latter symptom of suppuration of the parotids does not seem to have been reported in the last epidemic, although it is easily comprehensible that in the depressed state of the physical system the swelling of the parotid which sometimes accompanies ear trouble could run on to suppuration.

Otherwise in the aural symptoms accompanying or following grippe, there has been in the recent epidemic, as in many other things, nothing new under the sun.

Although there may have been nothing new in the symptoms, we can certainly say there has been something new in the treatment, for we read of a French aurist, in what might be called the aural dark ages, treating the purulent discharge of acute otitis media by filling up the ear with plaster-of-paris. Of course the discharge stopped, and the majority of patients stopped, too—like my grandfather's clock—never to go again.

The most marked peculiarity about the acute otitis media was the rapidity with which the inflammation spread up the Eustachian tube from the throat and seized the middle ear, accompanied by excruciating pain, an early perforation of the membrana tympani ; and, again, it was frequently ambilateral, which is unusual. Finally, despite this early perforation, there was a great tendency to spread to the mastoid. Hence, after one's first experience in treating these cases as an ordinary otitis media acuta, one found that one had to push the most vigorous treatment and not trust much to nature and milder courses.

The rapidity and severity of the outbreak strongly obliged one to admit of the great probability of a bacterial origin, the germ finding its way by the Eustachian tube. Scheibe, in Munich, found in the purulent discharge of eight of these cases bacilli 1.6–2 cc. long and 0.4–0.6 cc. thick, and which were more numerous in proportion as there was a shorter interval

between the outbreak of the influenza and the onset of the otitis, and also as the pain was greater. Scheibe thinks these rod-like bacilli may appertain to the influenza, as they are not found in the other forms of purulent otitis media.

It is curious how very few affections of the auditory nerve have been reported as compared to the optic nerve. For generally the auditory nerve, of all others, is the most susceptible to any toxic—for instance, in quinine poisoning, diphtheria, salicylates, etc.

There is one point in regard to the pain in the acute otitis media—it persisted in many cases unabated for several days after the spontaneous or operative opening of the membrana tympani. A big percentage of my own cases, as also of those reported, spread to the mastoid despite most strenuous measures to prevent it, until latterly I was prepared to operate on the mastoid very early, much earlier than I would in an ordinary case of mastoiditis. The discharge in all these cases of acute otitis media was markedly hemorrhagic. Hernet tried inoculation of this discharge on guineapigs, but with negative results.

To sum up, the characteristics of the post grippe otitis media acuta were : 1. Rapidity of onset. 2. Severity of pain persisting after perforation. 3. Tendency to be ambilateral. 4. Tendency to spread to mastoid. 5. Resistence to milder means of treatment. 6. Once established, its obstinacy and persistence. 7. Hemorrhagic nature. 8. Fever. 9. Swelling, etc., of surrounding parts.

GYNÆCOLOGICAL REPORT.

(*Continued.*)

By T. Johnson-Alloway, M.D.,
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Case X.—Aged 45 years; married eight years; one full-term child six years ago. Has had two miscarriages, last one eighteen months ago. Menstruation irregular, varying between three and six weeks. Suffers from dysmenorrhœa; leucorrhœa profuse; complains of constant pain in left iliac region and back; bladder functions normal; constant and severe headache; complains of being breathless on exertion and suffers much from exhaustion.

Examination.—Perineum and pelvic floor destroyed and impaired in function. Uterus very large, bulky, and lying down in retroversion. Cervix bilaterally lacerated and hypertrophied. Prolapse of both anterior and posterior walls of vagina. Heart enlarged, and suspicion of some degree of fatty change having taken place.

This patient had been gradually losing strength and ability to do any housework whatever. She complained of the constant bearing-down feeling in the pelvis, to which she attributed all her trouble, and that this feeling became more evident and intolerable as she grew older.

Treatment.—After confinement to bed for a week or so, I removed the cervix, repaired the perineum and pelvic floor, and shortened the round ligaments. This patient made a good recovery, but did not regain strength for at least six months after her return home, on account of the cardiac trouble. She is now, however, quite strong, and has been relieved of the feeling of loss of pelvic floor support. The uterus is reduced much in size, and is resting in anteversion. Her heart has improved under digitalis, and the whole result has been satisfactory.

Case XI.—This was a very interesting case, in so far that she was completely relieved of symptoms induced by a retroverted and fixed uterus, by massage.

Age 23; married two years; no pregnancy; menstruation every three weeks, very scanty, duration being two days. There

was severe premenstrual pain ; no leucorrhœal discharge ; some pain at times in back, but severe and constant pain in left iliac region of a burning character and confined to a small area. No headache, nausea, nor bladder trouble. The principal cause of complaint on the part of this lady was the severe and constant burning pain in the left iliac region. This condition rendered her very miserable, melancholic, and produced a general loss of health which became apparent to all of her friends.

Examination.—Vagina normal ; uterus retroverted, low down in pelvis, with fundus thrown strongly over to right side. There was no pain nor tenderness on right side of uterus, but over left iliac region and in base of that broad ligament there was excessive tenderness on bimanual examination. No mass, however, could be felt. The cervix was congested and elongated, but no evidence of endometritis. The uterus was firmly fixed in its retroverted position, and could not be moved by the ordinary means.

The case was not one in which I could have restored the uterus to its normal position by shortening the round ligaments, and on account of her wish for maternity and her youth, it occurred to me that I would try uterine massage by a method I have before spoken of in these reports, and at least give her a chance to save her ovaries, the left one of which I believe yet to be involved in an inflammatory exudation. Accordingly I put her to bed on hot water douches, and every second day forced the fundus uteri as far forwards as possible, stretched the adhesions and shortened ligaments to the extreme point of endurance on the part of the patient. This treatment, combined with rest in bed, purgatives and low diet, enabled me in the course of two months to considerably elevate the fundus, and to do so without causing much pain. I could not, however, succeed sufficiently to warrant the introduction of a pessary. The end of July was now approaching, and the weather becoming very hot, the patient suggested to me the advisability of her going to the seaside and return in the autumn for further treatment. I consented to this proposition and left shortly afterwards for Europe. In October she called on me, and to my surprise stated that she had not menstruated for the past two months

and that she was then close to the third period. I examined and found her advanced at least two months. The uterus was rising to a forward position, was soft, enlarged, and straightening itself towards the centre of the pelvis. The other ordinary evidences of early pregnancy were present also. The interesting feature in this case is that many surgeons would have removed the appendages at once, and I would certainly have agreed with them, in that it was the proper thing to do, if the patient objected to a prolonged course of treatment, and if she had been sterile a few years longer than this patient had been. By this latter proviso I mean a good deal. If a young married lady should be unfortunate enough to contract a unilateral pelvic inflammation involving the tube and ovary of that side, with exudative thickening of the peritoneal folds, the uterus will be in a short time drawn, either by its cervix or fundus, to that side through shortening of these folds, and gradually the fundus will be turned backwards at the same time into the well of the pelvis. But I wish to be understood correctly on this point. The uterus may not be fixed in its retroverted position by definite adhesions or inflammatory remnants stretching between the peritoneum covering the fundus and the adjacent peritoneum of other parts, but that the uterus is fixed in its position by strong traction on the part of the *shortened* pelvic ligaments of that side. I have proved the truth of this teaching (which is that also of Schultz's) by first being satisfied of the utter impossibility of replacing a retroposed uterus from what I supposed could only result from inflammatory remnants, and found on opening the abdomen that the fundus was free and easily brought up by aid of the fingers. The advantage obtained from the acquirement of this knowledge consists in being able to give our young married patients a chance towards maternity, provided there is only one side involved in the inflammatory disease, and there is also a healthy endometrium, as in the case related.

There is, however, much difficulty in carrying out this treatment. The manipulations require to be done with the greatest care, and the amount of force which can be tolerated without risk of further injury can only be acquired by constant experi-

ence. You may also make a mistake in diagnosis, and rupture a pus tube or ovary abscess; in such a case you should be prepared at once to do laparotomy and remove the diseased parts.

Case XII.—Age 27; married four years, one child two years of age. Menstruation very profuse and very irregular; the flow would cease for a week and then return, would remain absent for two weeks probably and return again. During menstrual intervals there was a profuse muco-purulent lucorrhœa. There was, as a rule, severe menstrual pain and at times intermenstrual, micturition frequent, but unaccompanied by pain. Has severe and constant headache with nausea. This patient has been a resident of the Southern States during the past two or three years, and has suffered severely from malarial fever. She is anæmic, and much reduced in strength in every respect.

Examination.—Perineum lacerated; vaginal walls much relaxed and pelvic floor impaired in function; uterus enlarged, chronic metritis, tender and retroverted; cervix bilaterally lacerated, cystic, and the seat of proliferating endometritis; region of left ovary and tube full and exceedingly tender to the touch.

The case of this lady was a somewhat difficult one to decide definitely upon, as regards the nature of the operation which would give the best results, and at the same time be duly conservative. The condition of the left appendages—fullness with intense suffering during a gently conducted bimanual examination—pointed towards a rapid cure by their removal. The appendages of that side were undoubtedly inflamed, and morbidly influenced by plastic exudation. But was there no other method of treatment but by laparotomy? The patient was young, had borne a healthy child within two years. The disease of the appendages was unilateral. She had had no prolonged rest-treatment.

The patient was put to bed for five weeks, after which the hypertrophied cervix was removed by Schröder's method, and the perineum restored by the flap-splitting method. I examined this patient three months after the operation; there was not the slightest tenderness of the pelvic floor, and no fullness to be felt in the left side of the pelvis.

Case XIII.—Aged 42; married twenty-two years, never pregnant. Menstruation had been regular until two years ago, since when it had been irregular. She stated that the discharge would be prolonged, sometimes to last through the entire month, and that there would often occur an unaccountable and sudden staining of her underclothing. She had very little pain beyond some backache at times. She would not allow an examination to be made by her local physician, so he advised her to come to Montreal.

Examination.—On separating the labia a red mass about the size of a filbert was seen protruding from the meatus urinarius. This proved to be a mucous polypi growing from the anterior wall of the urethra, close to the meatus. The small tumor would bleed on any and every slight cause, and give rise to the impression that she was either menstruating irregularly or was suffering from malignant disease. So large a mucus polyp is very rare in this position, but though rare, it is worth bearing in mind that such a condition does sometimes occur.

Case XIV.—Age 30; married fourteen years. Menstruation regular, duration four to five days; no severe pain during menstruation. Has had three full-term children; six miscarriages, principally at about second or third month. Two of these miscarriages occurred within three months of present consultation. Has a profuse leucorrhœal discharge; some pain in back; urinary function normal, but quantity small and very offensive. This patient states that she suffers from extreme nervousness; has nightmare and most peculiar nervous sensations, as "floating in the air," etc. She is much emaciated, anæmic, and there is a complete loss of energy, with a preconceived idea that she will become paralyzed or insane.

Examination.—Perineum lacerated; cervix enlarged, bilaterally lacerated; segments everted; proliferating endometritis, when touched will bleed; utero-sacral ligaments much contracted, pulling uterus upwards and cervix backwards, placing organ in anteversion. There was no evidence of disease of appendages, simply chronic metritis, resulting from a neglected cervical laceration.

Treatment.—This patient was put to bed on rest-treatment,

with massage and faradization, absolute seclusion from friends, etc., for the period of six weeks. At the termination of this course the cervix and perineum were repaired. Her convalescence was normal, and although she was by no means free from the strange hallucinations mentioned, she was much improved in strength and general health. Four month after the operation, however, I had a visit from this patient, and the improvement was very apparent. She stated that she had had of late none of the nervous symptoms before complained of, and that she was as strong as she ever wished to be. I think we may fairly attribute the nerve exhaustion in this patient to the constant drain associated with the diseased endometrium and cervix.

Case XV.—Age 36; married nineteen years, one child 18 years of age; has never been pregnant since. Menstruation regular, as a rule, but sometimes it will return at the third week, especially during the past two years; duration five to six days. She suffers considerable pain during menstruation, chiefly in back, hypogastrium and iliac regions. Complains of fulness in head, but not of decided headache. Suffers from pain down the spine. Has had frequent micturition and of a painful character during the past six months. Urine free from albumen and casts.

Examination.—Perineum lacerated; vagina lax; integument forming posterior commissure of vulva can be lifted up to a level with clitoris, and side traction applied to vulva and vagina shows an enormous cavity due to extensive destruction of pelvic floor. The uterus is strongly anteverted; it is enlarged, very hard, heavy and tender; it is mobile, can be pulled down to introitus without causing pain, Cervix is greatly hypertrophied and extensively cystic. The original laceration is now filled up with cicatricial tissue, and in consistence feels as hard as cartilage. There is a profuse discharge of mucus from the uterus. During bimanual examination the right ovary can be distinctly isolated; it is enlarged and very sensitive. The left ovary can also be felt, but is of normal size and free from pain on moderate pressure. The tubes on both sides are free from disease. This patient presented a very interesting problem. Were her symptoms due to this enlarged and diseased right ovary, or were they due to chronic metritis and the constant uterine discharge?

Treatment.—After two weeks rest in bed and preparatory treatment, the uterine cavity was curetted with the sharp instrument, the cervix amputated, and the perineum and pelvic floor restored by the flap-splitting method. This patient left for home three weeks after the operation, feeling fairly well. She has since written me to say that she feels quite restored to health, is able to conduct a large milinery business, and does not think she requires any more treatment at present.

This case is only one of many I have experienced. Their ill-health, and especially that which pertains to the nervous system, is without doubt due to the prolonged albuminous drain which these old cervical lacerations with chronic metritis entails. And there is no form of treatment which produces so radical a change for the better like that which was carried out in this particular case. And what makes the result so valuable is, that it is permanent. Emmet's trachelorrhaphy in old cases will produce no good permanent result whatever, as the central diseased portion is left untouched and hypertrophy of the cervix soon becomes re-established, with recurrence of the old symptoms. The manner in which the uterine cavity is curetted is also of importance in these old cases. The sharpest instrument should be used (Martin's I prefer), and the movements of the hand should be rapid and continuous; the pressure should be even and the stroke carried from fundus to cervix. In this way the ground can be gone over several times in one minute and every vestige of diseased endometrium removed. For a minor operation it requires a refinement of manual dexterity and skill unequalled by any other minor operation with which I am familiar.

(*To be continued.*)

Retrospect Department.

QUARTERLY RETROSPECT OF SURGERY.

By Francis J. Shepherd, M.D., C.M., M.R.C.S., Eng.
Surgeon to the Montreal General Hospital; Professor of Anatomy and Lecturer on Operative Surgery, McGill University.

New Methods of Treating Cancer.—Dr. Poucel, in an article (*La Semaine Médicale*, Sept. 10th, 1890) on the *Curability Diseases apparently Cancerous by the Interstitial Injection of Bichloride of Mercury*, states that he has lately been conducting a series of experiments in the Hôpital de la Conception at Marseilles. He has obtained rapid cure in a case of malignant pustule three days old by the injection of sublimate. These injections proved to him (1) the harmlessness of bichloride as regards the tissues, and (2) its efficiency in destroying microbes absorbed by the lymphatics. It occurred to him that this form of treatment was indicated in cancerous diseases, since the microbe (if there be one) is carried by the same channels, viz., the lymphatics. He submitted seven patients suffering from cancer to this treatment. The first patient, with cancerous ulceration of the right breast which had lasted six months, had the nipple retracted and the whole gland was nodular and indurated. The axillary glands were involved and there were some nodules in the skin. On the 19th of February injections were commenced into the tumor, preferably at the most indurated points. Three milligrammes of bichloride in solution (in three syringes-full of one gramme each with six punctures) were injected. There was no salivation, but a certain degree of inflammation of the breast. A month later the patient returned with the tumor much reduced in volume. The injections were renewed on the 12th of March and the three following days. The breast became much softer and more normal in appearance, and the tumor could with difficulty be distinguished. The nodules on the skin were next injected; four hours after the injections the nodules had disappeared. Some time afterwards the patient died of angina pectoris. Two other patients were treated without success—an old man aged 81, with osteo-sarcoma of the tibia, and a very

aged woman with extensive disease of the breast. His fourth case was a man suffering from cancerous disease of the anus. The tumor disappeared in twenty-three days with ten series of injections (three milligrammes every other day). Two other cases of scirrhus of the rectum were successfully treated in the same way. All these cases had been previously treated without effect by potassium iodide and mercury by the mouth. The seventh case was a tumor of the breast in a woman aged 58. The tumor was moveable, and there was no retraction of the nipple or involvement of axillary glands. This tumor entirely disappeared when treated by sublimate injections. Three months later there was no trace of the tumor. At the time of writing the paper he had four patients under treatment, and all were improving.

Dr. Poucel will not positively say that he has found out the proper method of removing cancers, but he has no hesitation in stating that tumors apparently cancerous will often disappear when treated by sublimate injections.

Dr. Owen Pritchard has lately (*Lancet*, Oct. 25, 1890) written a short paper describing his method of treating cancers by escharotics. The paper, which is called *Notes and Remarks on upwards of Forty Operations for Cancer with Escharotics*, gives some of the cases in detail. He looks on most kinds of caustic pastes, such as arsenical or chloride of zinc or Vienna paste, as, at the best, painful and very tedious applications. Dr. Pritchard's favorite paste is Michel's. It will do as much work in one hour as any of the others will do in a week. When properly applied, it will destroy completely the largest tumors of the breast in from eight to ten hours, and with care it may be so managed that the patient feels nothing whatever from beginning to end. The paste, which is not described in any text-book on surgery, is composed of one part by weight of asbestos cut small and rubbed down in a mortar into a fine powder and three parts by weight of Nordhausen or fuming sulphuric acid. These should be mixed together into a paste on a porcelain or glass slab with a glass spatula. This acid must not be confused with the pure sulphuric acid mentioned

in text-books, which is an exceedingly painful application, and simply chars and hardens the tissues. The application of the Nordhausen acid is not nearly so painful, and under its powerful hygroscopic action the tissues almost disappear and what remains of them becomes a soft, cheesy, non-adhesive mass of cells (?) which crumbles away when touched. Dr. Pritchard describes the application of this wonderful paste by giving notes of a recent case treated—cancer of the right breast in a woman aged 68, which had lasted four months. The nipple was retracted and the area for two inches around it ulcerated. The skin was adherent over the tumor. No enlarged glands in the axilla. On the evening of the 17th of May, 1890, the tumor was well painted over with a blistering fluid and the patient was given a one-grain opium pill. On the morning of the 18th the epidermis over the blistered area was easily removed, leaving a raw absorbing surface. Over this a small quantity of the hydro chlorate of cocaine was applied ; it is not safe to use more than than 1½ grains. At the same time one-sixth of a grain of morphia was injected subcutaneously. After waiting about ten minutes for the cocaine to become absorbed, a cake of the paste, freshly made, about one inch thick and sufficiently large to cover the whole of the tumor, was applied. Dr. Pritchard says it usually takes from 10–20 minutes for the Michel paste to destroy the skin, and during this time the patient suffers intense pain unless cocaine is used. In the case narrated the patient absolutely did not feel it, and by the time the local effect of the cocaine was passing off the skin had been destroyed and the hypodermic injection of morphine was beginning to have its proper effect. The paste was applied at 10.30 A.M. and the tumor was completely destroyed by 5.30 P.M. without the loss of a single drop of blood. The cavity was cleaned out and filled with asbestos, covered over with lint and zinc ointment, and then left for the night. The patient slept well, sat up next day, and since the operation has had no rise of temperature, According to our author, it usually takes twelve days for the eschar to separate, and during the latter part of this time the wound should be well syringed twice a day with a weak solution of permanganate of

potash, dusted over with iodoform, and poulticed. When the eschar separates it leaves a healthy granulating surface, which heals rapidly. In applying the paste great care must be taken to place the patient in such a position, by means of pillows and supports, that the tumor is exactly level, otherwise the acid of the paste will gravitate to the lower side and destroy that part only. An oozing of fluid takes place all around the edge of the paste within a short time of its application. This must be carefully sopped up, as it exudes, with small pieces of blotting paper or fine linen, otherwise it will run over the surrounding skin and cause unnecessary pain. To guard against any accident of this kind the skin around should be painted over with collodion. Cases are mentioned in which this paste has been applied where even the bone was involved and had to be destroyed.

Dr. Pritchard says this paste is especially suitable in cases of Velpeau's cancer, "en cuirasse," and also in very delicate, nervous old people and persons unfit for anæsthetics owing to cardiac and other diseases. He does not advise this mode of treatment where the axillary glands are affected. Dr. Pritchard has applied this paste to 29 breast tumors; one of these has been lost sight of. In 12 cases operated on eighteen months to two years ago, one died of recurrence in the liver, one of tetanus eight months after operation for recurrence, one from chronic bronchitis and asthma, and one of acute bronchitis. In these two latter cases secondary recurrence in the lungs was suspected, and in one there is local recurrence. The other seven have no return. Of ten cases, seven were free from recurrence after from twelve to eighteen months. Six cases treated in the last twelve months had, at the time the article was written, had no recurrence. In all these cases the malignant nature of the disease was certain, and the diagnosis was verified by other surgeons. The small number of local recurrences is remarkable, and Dr. Pritchard attributes this entirely to the mode of treatment. He also thinks that these frequent local recurrences in cases treated by the knife may be due to inoculation of other parts by the cancer cells conveyed on the operator's knife.

The results of treatment by escharotics, as described by those

who use them, is simply marvellous. One can hardly believe that the cases described were all of a cancerous nature, for in none were the axillary glands enlarged. Now this fact is remarkable, and few general surgeons, I imagine, operate in cases of genuine cancer of the breast without finding that in a very large proportion the axillary glands are affected, even when the disease is in its early stage. Quite recently I operated on two cases of breast cancer which had only been noticed for some three or four weeks, and yet in both cases the axillary glands proved, on microscopic examination, to be affected with scirrhus and not merely enlarged by inflammatory action. Dr. Pritchard's cases are given very loosely ; the age of the patient, duration of disease, etc., are mentioned in two cases only. Where patients refuse to submit to the knife, and where the disease is absolutely localized to the breast, this treatment by Michel paste is worth a trial. No doubt the great success claimed by men such as Bougard of Belgium is due to the careful selection of cases, and to the fact that they see the cases very early. Bougard* reports 62 cases out of 162 patients operated on, a period of three years having elapsed since the removal of the disease. In 58 of the 62 cases the disease was confined to the breast alone, and the tumors were not adherent to the skin or the parts below, hence the stage of the disease was an early one. In hospital practice especially it is very rare to get a patient with cancer of the breast who has not an accompanying involvement of the axillary glands, and hence the statistics based on hospital experience are usually unfavorable ; much more so than if taken from results obtained in private practice.

Surgery of the Gall-Bladder.—Kummell, in an interesting and lengthy article (*Deutsche Med. Woch.*, 1890, No. 15), which is quoted in the *Annals of Surgery* for October, 1890, says operative interference is indicated in cases of formation of gall-stones and their sequelæ, hydrops, empyema of the gall-bladder, closure of the common duct, and also in cases of tumors preventing the flow of bile. Interference is not so necessary in

* See Butlin on "Operative Surgery in Malignant Disease," 1887.

cases of gall-stone with biliary colic as in cases where the calculi set up inflammation in and around the gall-bladder, causing adhesions, ulcerations, perforations, etc. A case is cited where the gall-bladder was so distended that it was mistaken for a right ovarian cyst, and this after an examination under ether. Two days subsequently patient had severe pain in abdomen, vomiting and collapse, of which she shortly died. On opening the abdomen after death it was found full of purulent fluid, in which was a great number of gall-stones. The tumor, which, of course, was a distended gall-bladder, reached down to the pelvis and was adherent to the right ovary. [I saw one such case some years ago, where the tumor was diagnosed as ovarian. Operation was declined, and at the autopsy the tumor was found to be an immensely distended gall-bladder, attached by its extremity to the right side of the uterus. The patient was under the care of the late Dr. John Bell.]

Another good reason for operation is closure of the common duct with cholæmia. Cases of simple biliary colic are easy of diagnosis, but the slow chronic cases, with closure of the cystic duct, are more difficult. Jaundice is absent, and patient complains for a long time of pain in the right side or in the region of the liver. If it is possible to feel the tumor under the free edge of the liver, this is a great help to diagnosis. In empyema of gall-bladder there is a tumor, absence of jaundice, long existence of paroxysmal pains, and the presence of dull, heavy pressure in the hepatic region. Should the common duct be closed, there is, of course, jaundice and a history of previous attacks of biliary colic. The differential diagnosis between tumors of the liver and those of other organs is difficult and often impossible. Of all the operations, cholecystotomy is without doubt the oldest and safest. Cholecystectomy is an operation which is most radical, but often most difficult when surrounded by adhesions. It would be a most radical operation if the formation of gall-stones took place only in the gall-bladder, but it is well authenticated that gall-stones may be found in the liver.

In a paper by the writer (*Annals of Surgery*, Nov. 1890) on

cholecystotomy, a case is related where the diagnosis was most obscure, the tumor being taken for one connected with the bowel, and from the history and appearance of the patient probably malignant. Yet on opening the abdomen the gall-bladder was found to be made up of a large mass of inflammatory tissue containing three large gall-stones, and the chief part of the tumor consisted of an elongated portion of liver commonly called the lacing lobe. The tumor was freely moveable, and was situated to the left above the umbilicus. The patient made a rapid recovery, the biliary fistula closing on the 15th day.

Dr. J. C. Reeve, jr., of Dayton, Ohio, reports a case of cholecystotomy (*Cincinnati Lancet-Clinic*, Aug. 23rd, 1890). The patient was a woman aged 39, and had a tumor in the right lumbar region of the abdomen. It was supposed to be a distended appendix or colon, and it was not until an exploratory incision was made that the swelling was recognized as a distended gall-bladder. The bladder was stitched to the abdominal walls, and six days after the gall-bladder was opened without anæsthesia ; a pint of clear fluid was evacuated and a small stone removed. The patient made a rapid recovery, the biliary fistula closing in three weeks.

Abscess of the Liver.—In a clinical lecture at Hyderabad by Surgeon Leahy, F.R.C.S., Eng. (*Lancet*, Aug. 23rd, 1890), he stated that he had treated fifteen cases of liver abscess by free incision and drainage under antiseptic precautions, with only two deaths. The drainage-tube should be large, and as soon as the discharge from the cavity of the abscess is sufficient only to stain the dressings, it should be removed.

Resection of the Liver.—At a recent meeting of the Academy of Medicine of Paris (*Lancet*, Aug. 23rd, 1890), M. Terillon recorded the case of a woman, aged 53, who was admitted into the Salpêtrière suffering from a painful tumor in the hepatic region. History of four years' duration. An exploratory puncture was made into the swelling and some fluid resembling that of a hydatid cyst was drawn off. Laparotomy was determined upon and performed April 1st. A portion of the liver about the size of two fists was drawn outside, and was found to be riddled

with innumerable small hydatid cysts, so it was resolved to resect this part of the liver. Around the base of the growth was placed an elastic ligature, and thus an artificial pedicle was created. The tumor was separated from the body of the organ and fixed outside the abdomen. Seven days were allowed to elapse to give time for adhesions to organize and shut out the peritoneal cavity. At the end of this time the now gangrenous tumor was removed with the ligature. In six weeks the wound was completely healed and the patient had regained her usual strength and weight.

Removal of Pancreas for Carcinoma.—Rugge records a case of removal of the pancreas for cancer. Patient, a woman aged 50, came under treatment for gastric symptoms, loss of appetite, constipation, and pain radiating from the epigastrium. A tumor was found between the umbilicus and left hypochondrium, hard, resistent, and somewhat movable. Retro-peritoneal sarcoma was diagnosed. Laparotomy was performed and the removal of the growth undertaken. The growth was found to be pancreas, the seat of primary carcinoma. The patient made a rapid recovery, but we are not told of the ultimate result.—*Medical Press and Circular*, Oct. 1, 1890.

New Method of Performing Gastrostomy.—Dr. Eugene Hahn describes (*Centralblatt f. Chirurgie*, No. 11, 1890) his method of performing gastrostomy by fixing the stomach in the 8th intercostal space ; he first did the operation in June, 1887. Since then he has performed eight operations by this method ; these compare very favorably with the seven cases performed by Fenger's method. The operation is performed by making an incision parallel to and 1 centimetre below the margin of the ribs in the fore part of the 8th intercostal space ; a second incision is made in the 8th intercostal space, close to the junction of the 8th and 9th intercostal cartilages, in an oblique direction from above downwards. The parietal peritoneum is punctured at this point by forceps or knife and enlarged by spreading forceps. The thumb and index finger of the left hand are introduced into the first incision and the stomach sought for at a point corresponding as nearly as possible to the fundus. This is grasped by

dressing forceps and drawn through the 8th intercostal space until the stomach projects 1 centimetre beyond the skin. If some days are to elapse before opening the stomach, it is fastened to the skin with sutures which pass through the serous membrane only; but if an immediate opening is necessary, the sutures must go through the whole thickness of the stomach. By experiments on cadavers Hahn found that there was no danger in wounding the diaphragm if the incision were made between the 8th and 9th costal costal cartilages. The advantages are: (1) a small, contracted stomach is found with great certainty and can be fixed with less dragging; (2) the adhesion seems stronger and more sure than when the abdominal incision is made, and the contents of the stomach do not come into contact with the parietes to the same extent as in older methods; (3) nutrition is better established, because the food is introduced at some distance from the pylorus; and (4) no obturator or other means of closing the opening are needed afterwards, because the proximity of the cartilages prevents the fistula becoming larger.

Partial Enterocele.—Dr. Rudolf Trjebuky of Cracow (*Wien. Med. Woch.*, Oct. 11, 1890) reports a case of strangulated femoral hernia, in which it seems to have been clearly demonstrated during the operation of kelotomy that the hernial protrusion was of the form known as "partial enterocele" or Richter's hernia; in this variety of hernia a small portion of the circumference of the intestine and not, as in Littré's, a pre-existent diverticulum is constricted by the hernial orifice. Whilst the existence of Littré's or diverticular hernia has never been questioned, there is still much difference of opinion as to the variety to which Mr. Treves has given the name Richter's hernia. Roser holds that it can never occur in an acute and free form, and many German surgeons are of opinion that such diverticular protrusion of the intestinal wall is due to old adhesions between the surface of the intestines and the sac. In the case reported the nature of the hernia was diagnosed before operation. The patient, a woman aged 60, suffered from well-marked and severe symptoms of acute strangulation, and presented a hard and fixed tumor the size of a hazel-nut in the left

groin. The sac having been opened, a portion about the size of a kreutzer piece of dark strangulated hernia was exposed. The border of this was so closely constricted by the edges of the ring that much difficulty occurred in dividing the stricture. The whole loop of intestine was then dragged down and exposed, and the nature of the hernia proved beyond doubt that the strangulated portion consisted of an artificial diverticulum from the convex surface of the loop, which presented a marked contrast to the rest of the exposed intestinal wall, from which it was cut off by a deeply indented ring of a dark blue color, caused by the constriction. The diverticulum speedily disappeared after the release of the strangulated intestine. No trace of adhesion could be found between the intestine and sac. The symptoms of strangulation were much more acute and severe than is usual in cases of Richter's hernia.—(Quoted from *Supplement to British Medical Journal*, Nov. 8, 1890.

Acute Strangulation of the Intestinal Wall.—Schaeffer (*Deut. Med. Woch.*, No. 27, 1890) reports two cases of Littré's hernia, both of which were operated on and terminated favorably. In commenting on these cases Schaeffer remarks that in neither was there intestinal obstruction; indeed the diagnosis was made from the fact that, together with the symptoms of strangulated hernia, there were repeated spontaneous passages of gas and fæces. According to Laurents, who has observed twelve cases of this kind of hernia, obstruction develops nearly always in Littré's hernia, the evacuation, if observed, depending rather upon dislodgment of fæcal masses lying in the bowel beyond the seat of obstruction than upon the preservation of the continuity of the intestinal canal. The cases reported, however, passed flatus and solid matter repeatedly and spontaneously, and operation was indicated only by concomitant symptoms. This is an important observation, since dependence on Laurents' method might lead to unwise postponement of the operation.—(*Amer. Jour. of Med. Sc.*, Nov. 1890.)

It is curious how few of the standard English and American works on surgery mention Littré's hernia. It is not mentioned in Holmes' System of Surgery, in the International Encyclopædia

of Surgery, nor in Buck's Reference Handbook of the Medical Sciences and, Erichsen's and Bryant's Surgeries pass it bye without notice. Most surgeons understand by Littré's hernia, a protrusion of a portion of the wall of the intestine and not necessarily a pre-existent diverticulum. Although Treves calls this Richter's hernia, still in the article in his Surgery by Sir William MacCormac, Littré's hernia is described as a rupture where a " portion only of the circumference of the bowel is involved in the hernial ring."* I saw, a couple of years ago, a well-marked case of Littré's hernia in an old lady aged 77. There was no obstruction of the bowels from fæces, and flatus passed freely, but there was intense pain, severe and uncontrollable vomiting, and tenderness over the whole abdomen. The pain was situated in the epigastric region, behind the ensiform cartilage. Some form of strangulation was diagnosed, but exploratory operation was declined. She lived three days, and at the post-mortem a portion of the circumference of the bowel was found strangulated in the internal inguinal ring behind a small mass of omentum ; the strangulated portion was not attached by adhesions to the omentum, and the nipple-shaped projection disappeared on freeing the bowel, leaving a dark discolored circular portion which was in strong contrast to the rest of the bowel. There was no pre-existent diverticulum, although the situation of the strangulated intestine was in the ileum, about three feet from the ileo-cæcal valve, the usual site of Meckel's diverticulum. Without doubt operation would have relieved this case.

Suppurating Lymphadenitis of the Groin simulating Inguinal Hernia.—T. Saltzmann (*Finska lakar Dallsk. hand.*, Bd. 30, p. 374) reports a case of the above. A woodman, aged 42, suffered from a small tumor of the right groin, which, as it was gradually increasing in size and accompanied by disturbances of digestion, pointed to an inguinal hernia, and an operation seemed indicated. The patient had suffered from the tumor for four years, and it could always be easily pushed into the abdomen, but latterly every attempt at reposition was in vain

* A capital plate of such a hernia is figured in Bernard and Huette's Operative Surgery, by A. T. Norton, pl. 63, fig. 8.

and it became very painful; there was obstipation, but no vomiting. Operation revealed a hernia like cavity filled with a large mass of detritus; the spermatic cord lay to the outer side of the sac, whose thickened walls were continued up through the inguinal canal to the upper and posterior portion of the pelvis; here it communicated with a large retro-peritoneally situated cavity filled with the same substance as the cavity in the inguinal canal. Microscopic examination showed it to be made up of alveolar tissue, completely resembling lymphatic gland tissue. —(Quoted in *Annals of Surgery*, Sept. 1890, p. 216.)

Some years ago I had an interesting case in the Montreal General Hospital which simulated strangulated femoral hernia. The patient, a girl aged 19, when up on a step-ladder hanging pictures, suddenly felt something give way in her groin, and there was severe pain. She was put to bed, and on examination a tender swelling the size of a walnut was discovered in her right groin. Next day vomiting set in, and the tumor was excessively painful and tender; bowels constipated. On entering hospital she had a temperature of 101°, a tender, tense swelling in situation of right saphenous opening, vomiting and constipation. The case was looked upon by myself and other members of the surgical staff as one of strangulated femoral hernia, and taxis failing to reduce the tumor, operation was proceeded with. On carefully making an incision over the tumor, it was exposed and found to be an inflamed and enlarged lymphatic gland situated in the saphenous opening and having stretched tightly over it a small nerve, probably the crural branch of the genito-crural. The gland was removed and all the symptoms subsided. No doubt the vomiting and obstipation was reflex, and due to the stretching of the crural nerve over the gland.

Surgical Treatment of Acute Intestinal Obstruction.—At the meeting of the British Medical Association, held in Birmingham in July, 1890, Mr. J. Greig Smith opened the discussion on the above subject. His views appear to me new and worthy of attention. In cases where the obstruction is recent, he first, as he does in all cases, administers a full stimulating enema containing brandy. Anæsthesia is made complete. The incision

is made in the median line, below the umbilicus, and is two inches in length—(he condems a long incision and the introduction of the hand) ; through this incision the bowels are inspected, turned gently to one side and the other, pulled upwards and downwards. The piece of gut most distended with gas rises to the surface and often presents at the opening ; congestion here is often greatest. A short inspection enables one to fix on the most likely coil ; this must be followed up in the direction of increasing congestion and distension, and it will certainly lead to the point of obstruction. The obstruction relieved, the operation is completed, and the abdomen has only to be closed. In cases where the obstruction has lasted for a week or more, the patient's strength is waning, and he is no longer able to vomit fluids as rapidly as they are passed into the stomach from the irritated intestine ; fluid is gradually replacing gas in the intestines and there is dulness in the flanks, and the fluid-laden intestines lie at the bottom of the abdominal cavity. The stomach is getting distended ; distended coils of intestines are visible through the abdomen. Patient's features are drawn and pinched, and then cold and clammy ; his efforts to vomit are unsuccessful. In this case anæsthesia is full of risk. The distended stomach should first be emptied by a stomach tube before anæsthesia is begun, and anæsthesia should be continued no longer than is necessary to make the parietal incision and place the sutures ready for tying. All further manipulations may be carried out without pain to the patient whilst he is recovering from the anæsthetic. The cause of obstruction is found and relieved in the same way as in the first case ; in this case the intestine nearest the obstruction will be distended with fluid and not with gas. Although the cause of obstruction is removed, the intestinal contents do not pass on, because the bowel is helplessly paralyzed and powerless, and also because of the numerous kinks and flexions ; and to relieve this condition Mr. Smith performs intestinal evacuation and drainage. The surgeon should sit down by the side of the patient and spend an hour or two there doing it. Mr. Smith states he has successfully incised the bowel, evacuated its contents, sutured the wound in it, and

returned it, but the bowel empties itself slowly, and to do this during anæsthesia greatly increases the collapse. Anæsthesia is continued only during the very few minutes necessary for making the incision and inserting the sutures. The relief of the obstruction and the intestinal drainage may be carried out while the patient is recovering from the anæsthesia or completely sensible. The patient should be completely enveloped in warm blankets and the area of operation only exposed. A distended but not inflamed piece of bowel is brought to the surfoce, and at the free corners of an area about an inch square four quill sutures penetrating the serous and muscular coats are inserted; these are tied two on each side to pieces of adhesive plaster carried round the back and fixed to the abdomen. The outer coats of the intestines are incised by a scalpel and then the gut is pierced by a large aspirating needle with a long piece of tubing attached to carry off the fluid. When the evacuation has been carried out to a sufficient extent the needle is removed. The small opening in the bowel is now closed by a continuous suture, the bowel thoroughly cleansed and returned, and the sutures in the parietal opening tied. If the evacuation is not readily accomplished, then a small drainage tube may be placed in the needle opening in the bowel and left there a day or two. Mr. Smith thinks it wiser to perform enterostomy than to spend much time in groping about for the cause of the obstruction. In the third case the condition is almost hopeless; if there is a small chance of saving the patient's life, anæsthesia would almost certainly do away with this chance, and any severe operation would be fatal, so here Mr. Smith advises merely the use of local anæsthesia to make the skin incision and carry out intestinal drainage as described above, and if such a case, by stimulation, can be tided over forty-eight hours, his life would probably be saved.

Rupture of Liver and Kidney; Laparotomy.—Dr. H. C. Dalton (*Weekly Medical Review*, Oct. 4th, 1890) reports the case of a mulatto, aged 28, who fell a height of twenty-five feet across an iron bar, the right lumbar region being the point of contact. He became faint, but did not vomit, and did not lose

consciousness. He was at once taken to the hospital, when no abrasion or contusion was found at the seat of injury. The urine was drawn off and found to be quite bloody ; there was pain on pressure over the right lumbar and hypochondriac regions, and dulness in the right lumbar region as high as the axillary line. He suffered much pain during the night, and his temperature rose. Next morning the abdomen was distended, and tender and dull in both flanks. Believing that the liver was ruptured, Dr. Porter proceeded to open the abdomen, when he found a good deal of blood in the peritoneal cavity and some clots beneath the liver ; on the posterior surface of the liver a large rent could be felt about three inches long. As Dr. Porter was unable to get at this so as to suture it, he packed it with gauze, leaving one end of each strip outside the abdomen, which was then closed with interrupted silk sutures involving skin, muscle and peritoneum. The patient had no bad symptom, and left the hospital five weeks after the accident the gauze having been removed on the second day.

Expectant Treatment versus Interference in Cases of Tubercular Joint Disease.—Mr. Watson Cheyne sums up an exhaustive paper on the above subject as follows (*Lancet*, Nov. 15th and 22nd, 1890) : " Operative interference is desirable when chronic suppuration has occurred at an early stage, where the disease is localized to one part of the synovial membrane or bone ; in many cases at a later stage, where there is a deposit in the bone along with general synovial thickening ; in cases of diffuse synovial thickening, where expectant treatment has failed to arrest the progress of the disease ; in cases where a better functional result can be obtained by operation ; in cases, in adults, where deformities are present which can only be remedied by operation ; in many cases where there are septic sinuses ; in certain cases where phthisis is present or the general condition is such as to require the removal of the disease ; in adults more frequently than in children ; in the poor more frequently than the rich. Expectant treatment should be employed in the first instance in cases of diffuse synovial disease without suppuration, provided that there are no other reasons requiring operative in-

terference, and it should be persevered in so long as improvement follows; also at first in cases in children, where caseous deposits are present in parts where they cannot be reached without excision, or in cases where the presence of deposits in bone is doubtful; also in some instances where septic sinuses are present. In any case it should be persevered in longer in children than adults." Mr. Cheyne says that we can now cut into joints at an early stage while they are yet comparatively healthy, and remove portions of synovial membrane and bone without fear of doing harm by our operation, and with good chance of ridding the patient of his disease and getting a useful joint. The cures by the expectant treatment are often obtained only at a great expenditure of time, and after great endurance of pain and at a certain risk to the patient, and it by no means follows, because a good result is obtained in any given case by expectant treatment, that it would not have been wiser, and that in a number of similar cases the results could not have been on the whole better, had operative measures been employed.

Dr. Glück's Method of Inserting Ivory Joints as a substitute for Excised Ones.—At the recent Berlin Congress Dr. Glück read a paper (*Brit. Med. Journal*, Sept. 13th, 1890) and gave several demonstrations of a method by which he claims that it is possible to plant not only portions of bone, but whole joints. Whatever the ultimate possibilities of this plan may turn out to be, it at least merits a somewhat critical examination. Dr. Glück had a skeleton in the museum in which all the joints were replaced by artificial ones of ivory. A patient was shown with one of these ivory joints. It was a knee joint; the wound was completely healed, and, seated on a chair, he was able to both flex and extend his knee-joint through an angle of nearly 45° without any pain or serious inconvenience. He also showed a plan of employing an ivory splice for uniting two pieces of a long bone in which either an ununited fracture was present or a considerable loss of substance had taken place. Dr. Glück reported ten cases in which the plugs have been inserted into the cut ends of bones, and all made good, immediate recoveries. What are the prospects of ultimate success? The ivory may

possibly remain imbedded in the tissues and give rise to no further trouble, but this result is unlikely. The ivory plugs may act as a source of irritation, so much so that they will become loosened and form a sequestrum, or the irritation will set up an overgrowth of bone in the neighborhood, and thus a joint at first movable will be slowly enveloped in new bone formation and have its movements completely checked, and then complete absorption of the joint will only be a process of time. Of course time will show the result of Gluck's method, and we should be very much surprised if at the next Congress he still advocates the introduction of ivory joints. (See also illustrated article in *Archiv f. Klin. Chirurgie*, Bd. xli, Hft. 1, 1890.)

Koch's Treatment for Tuberculosis.—The announcement of the marvellous discovery of Koch has stirred not only the medical world to its depths, but also the world in general. The account of the cures effected reads like a fairy tale, and had the cure been promulgated by any other than Koch it would have assuredly been looked upon as the wild dream of an enthusiast, and so would have attracted but little attention. In the article by Koch (*Deutsch. Med. Woch.*, Nov. 14, 1890) we are assured that lupus can be positively cured by the injection of his lymph between the shoulders. In glandular disease and tuberculous disease of bone the living tuberculous tissue is destroyed and can then be removed by the surgeon. In joint affections the injection of the lymph causes necrosis of all the living tubercular tissue and so defines the extent of the disease, but it has no influence on dead tissue. The surgeon's occupation will not be gone, but rather increased, as it will be necessary for him to open joints and incise bones to remove the *débris* resulting from effects of the lymph injection. The remedy is too recent a one and too little is known about it yet to form an opinion, but it promises to be one of the most valuable discoveries of medical and surgical science. So much has been written about "Koch's cure" for tuberculosis that at present I merely mention it, and trust that in a future report personal experience will enable me to go more into details.

Early Diagnosis of Kidney Tumors,—Prof. Guyon of Paris

believes that surgical intervention is indicated, both for diagnosis and treatment, when characteristic hæmaturia and pain distinctly localized in one or other loin are met with, and in his opinion the time when the tumor is perceived must not be waited for. The cystoscope, though of service, is a defective means of diagnosis in his experience, and fails to declare which is the affected kidney. Periodic microscopic examination of the urine is needful before deciding that hæmaturia is absent.—(*Annales des Maladies des Organes Genito-Urinaires*, June, 1890 ; quoted from *Edin. Med. Jour.*, Nov. 1890.)

The Rupture of the Rectum by means of Petersen's Colpeurynter.—Dr. G. R. Fowler (*Annals of Surgery*, Aug. '90) records a case of rupture of the rectum by Petersen's dilating bag during an attempt to perform intra-peritoneal cystotomy. He attributes the accident to degenerative changes in the rectal wall. Only eight ounces of fluid were used with the bag. The patient survived the operation but a few hours, dying of shock. Two similar cases are referred to, and the conditions under which the use of the bag is contra-indicated are alluded to.

The Use of Skin from Puppies for Skin-Grafting.—Dr. M. E. Van Meter (*Annals of Surgery*, Aug. 1890) reports a case of skin-grafting with the skin of Mexican pointer puppies in a case of extensive ulceration from burns. The grafts took famously, and the writer thinks them superior to human grafts. In the *Lancet* for March 15th, 1890, Mr. Alex. Monro of Edinburgh reports a similar case. A young black and white greyhound was used.

Removal of the Gasserian Ganglion for Severe Neuralgia. Mr. Wm. Rose, of King's College, Hospital, London, reports a new and brilliant operation (*Lancet*, Nov. 1st, 1890) in a paper read before the Medical Society of London. The case was that of a woman with severe facial neuralgia which did not yield to prolonged medicinal treatment. At first the pain was limited to the course of the inferior dental nerve, and accordingly Mr. Rose stretched and divided that nerve where it enters the lower jaw bone, and also divided its mental branch at its exit from the bone. This operation was for a time successful, but after some

months the pain returned and then a portion of the inferior dental nerve was removed in its bony canal. This was successful for several months, but again the pain returned, and this time along the gustatory nerve. A third time Mr. Rose operated, exposing and dividing the gustatory and dental nerves in the pterygoid region. No permanent relief was given, so Mr. Rose determined to remove the Gasserian ganglion. He first excised the upper jaw ; when bleeding had been arrested and the foramen ovale exposed to view, the pin of a half inch trephine was passed into the foramen and the ring of bone surrounding it was carefully sawn and lifted out. The Gasserian ganglion could then be seen lying upon the apex of the petrous portion of the temporal bone. The ganglion was loosened by passing an aneurism needle beneath it and removed in three or four pieces by the aid of a narrow probe-pointed bistoury and fine hooked forceps, the dura mater being uninjured. The bleeding was slight. The skin incisions were brought together in the usual way and dressed with cyanide gauze. The patient suffered somewhat from shock, but next day her general condition was satisfactory. The old pain ceased from the day of operation and has not since returned. The eye on that side became so disorganized that it had to be removed.

This operation reflects great credit on the boldness and dexterity of Mr. Rose, and is encouraging in those almost hopeless cases of facial tic, the victims of which will submit to any operation to avoid the extreme pain which makes life unbearable.

Successful Removal of Hydatid Tumor of the Brain.—Dr. Graham and Mr. Grubbe record a case (*Australasian Medical Journal*, July, 1890) in which a hydatid tumor was removed from between the dura mater and pia mater of the brain. The patient was a lad, 16 years of age, who suffered from severe headache, nausea, vertigo, double optic neuritis, with atrophy, loss of memory, and paresis of right arm and leg. A tumor involving the left motor area was diagnosed and Mr. Grubbe trephined over it ; he found the bone very thin, not more than one-sixth of an inch thick, and on opening the dura mater a single simple hydatid cyst was seen and easily extracted. The

pia mater was intact. The cyst held 19 oz. of fluid. The patient recovered rapidly, and after six weeks was able to get up and walk, his memory returned, and he was in all respects well except for his blindness. It is believed that this is the first recorded case of the kind. Dr. Davies Thomas records three cases of recovery from cerebral hydatids, in one of which the cysts were passed through the nose and mouth ; in the other two they were removed through incisions in the scalp after the tumors had perforated the cranium.—(*Lancet*, Sept. 13, 1890.)

Removal of a Calculus from the Ureter by combined Abdominal-Lumbar Section.—Dr. Rufus B. Hall reports a case of the above (*N. Y. Med. Record*, Oct. 18th, 1890). A patient had been ill for four to five years, and suffered from severe paroxysms of acute pain every five or six weeks. Never had hæmaturia ; was perfectly free from pain in the intervals. Dr. Hall determined to explore by abdominal incision. When the patient was under chloroform a small tumor was discovered in the region of the left kidney. The abdomen was opened in the median line, and on introducing his hand Dr. Hall found an elongated, exceedingly thin-walled cyst, somewhat larger than the closed fist ; below the cyst, in the direction of the ureter, a stone could be felt. It was clear that an impacted stone in the ureter had to be dealt with. The left hand was not taken out of the abdomen until the stone was removed. A lumbar incision was now made and the kidney incised, when a great rush of urine escaped and the cyst in the abdomen disappeared. With a forceps introduced through lumbar incision several attempts were made to remove the stone without result until a freer incision in the kidney was made and the sac invaginated by the hand in the abdomen. The wounds were closed and a drain placed in the kidney. The stone only weighed 3½ grains. Patient recovered perfectly from the operation, going home in perfect health on the thirty-sixth day.

Treatment of Complete Prolapse of the Rectum.—Mr. Harrison Cripps, in speaking of the treatment of prolapse of the rectum (*Lancet*, Oct. 11th, 1890), divides it into palliative and operative. The palliative treatment, he says, is often very suc-

cessful in children. Attention should be first directed to the cause; if there is phimosis, stone, polypi in the rectum, or anything causing undue strain, it should be remedied. The stools should be passed with the child lying on the side. Cod-liver oil assists the general health and keeps the bowels regular. In adults, palliative treatment is not so beneficial. A small injection of eight ounces of warm water should be given before going to the closet, and after the motion one ounce may be injected and retained. If there be any superficial ulceration, a drachm of tincture of catechu may be added to the cold water.

Mr. Cripps is not in favor of cutting operations, but believes in the linear cautery. His method of operating is as follows: The contents of the bowels having been thoroughly cleared out, the patient is anæsthetized and placed in the lithotomy position. The prolapse is then made to protrude; four lines of cautery, a quarter of an inch wide, are now drawn along the bowel in its long axis—one in front, one behind, and one on either side. Should any veins be opened, they must be tied. The operation should be done quickly and the bowel returned before congestion and swelling makes it difficult. He prefers the actual cautery to Paquelin's, as the latter cools too rapidly. A thick rubber tube is introduced for about five inches and strips of oiled lint arranged around this as high as possible, and between the oiled lint and tube is packed cotton wool with iodoform dusted on it. The internal dressings are only kept for a few days. The bowels should be kept confined by small doses of opium for ten days and then opened with small doses of castor oil and enemata. Motions should be passed lying on the side for at least six weeks after the operation. Mr. Cripps is quite satisfied with the results of this operation, and his experience coincides with Mr. Herbert Allingham's.

Raw-hide Plate for Intestinal Anastomosis.—Dr. F. B. Robinson of Toledo, Ohio, in a recent article (*N. Y. Med. Jour.*, Oct. 18th, 1890), advocates the use of the raw-hide plate as a substitute for Senn's decalcified bone plate. He has used it with great success in experiments on dogs which he has been performing for several years past.

The raw-hide plate is made by shaving the hair from the green hide of an ox; the hide is then cut into strips one inch wide and two and a half inches long, and perforated by a diamond shaped aperture; four to six sutures are attached, and the plate can be then used, dried or green. The advantages are that they are easily prepared and easily absorbed, but not too soon.

Peroxide of Hydrogen in Suppuration.—Dr. Robt. T. Morris of New York strongly advocates (*Journal of American Medical Association*) the use of peroxide of hydrogen in all cases of suppuration, in sinuses, and other places where it cannot be easily got at. It is best to inject a small quantity, wait until foaming ceases, and repeat injections until the last one fails to bubble, then we know the cavity is chemically clean. Care must be taken not to let it come in contact with hair, as it bleaches it to a golden yellow color, and is the substance usually used by barbers and others as a golden hair dye.

Hospital Reports.

MONTREAL GENERAL HOSPITAL.

Condensed Reports of Cases in Dr. MacDonnell's Wards.

Chronic Endocarditis; Clinical illustration of the remote effects of valve lesions; Right Hemiplegia; Ulceration of gums on affected side; Sudden development of spinal symptoms.

Ann S—, a woman of middle age, admitted July 17th, 1890. Dyspnœa on exertion, palpitation, precordial pain, and œdema of the feet. Has had four children. No history of rheumatism. The present illness is said to have begun four weeks before admission, when she woke up in the night to find herself extremely breathless. In the morning both legs were swollen, but the left rather more than the right. There was also severe pain in the epigastrium. She continued at household work until forced to come to hospital.

Dyspnœa is very urgent; œdema of legs; visible pulsation in the carotids, brachials and radials; pulse 66, irregular, unobliterable, non-collapsing; no capillary pulse. Heart's impulse

is visible over a considerable area of the chest-wall, and it can be felt to be strong and heaving. The area of superficial cardiac dulness on percussion is increased, beginning vertically at 4th costal cartilage and extends transversely from midsternum to the areola of the nipple. The apex can be felt 4½ inches from the left edge of the sternum. A harsh systolic murmur is audible all over the cardiac region, loudest at the apex, and very loud at the aortic cartilage. It is heard around the left chest and below the angle of the scapula, but not in the root of the neck or at the lower end of the sternum. The liver is decidedly enlarged, extending one inch below the margin of the ribs in the right mammary line. Spleen not enlarged. Total quantity of urine passed daily is normal; specific gravity 1030; contains a large proportion of albumen.

For the fortnight after admission there was improvement in the symptoms. Rest in bed and the administrrtion of digitalis seemed to do her good, but at midnight on the 30th July she had a seizure, described as beginning in convulsive movements. Dr. McKechnie (house physician) found the right side of the body paralyzed and unconsciousness complete; increased deep reflexes on right side and ankle clonus; involuntary passage of urine; difficulty in swallowing. Consciousness soon returned, but speech was completely lost for some days.

Aug. 30th.—Discharged much improved yesterday, but to-day came back again with severe precordial pain. Heart's action tumultuous and irregular. Last night had a most severe attack of dyspnœa, for which five minims of amyl nitrite was given.

She was discharged in the middle of September, and re-admitted October 3rd. Both legs are œdematous, bnt the right more so than the left. Slight paralysis of the right side of the face with difficulty in articulation; slight deviation of tongue to the right. Decided wasting of the right forearm, especially of the extensors of the hand and supinators of wrist. Ankle clonus and slight exaggerated knee-jerk in the right leg. The urine is highly albuminous.

Oct. 7th.—The murmur at the aortic cartilage appears to be double. The systolic murmur is propagated upwards, but the diastolic is heard only at the base.

Oct. 24*th.*—A curious train of symptoms developed themselves to-day. There had been constipation, and during the preceding twenty-four hours she had been given twelve grains of calomel in divided doses without effect. An enema was then given with slight effect. After this the patient complained of intense pain in the abdomen. Two hypodermic injections of morphine, each of gr. $\frac{1}{8}$, were given during the night. On the following morning she still was in great pain, and complained of itchiness in the skin of the abdomen, which she was continually scratching. There is also pain complained of in the back. Pressure on the two lower dorsal and two upper lumbar spines caused her much pain. Bowels continually moving. The bladder function is unaffected.

Oct. 25*th.*—Hyperæsthesia of the abdominal muscles is diminishing in intensity. *The patellar reflexes are now absent*, as well as the superficial abdominal reflexes; the right plantar is slightly greater than the left plantar reflex; slight right ankle clonus.

Oct. 27*th.*—The new symptoms have disappeared; diarrhœa has ceased. Complains to-day of itchiness over the whole of the back, shoulders, and down the arms to the hands. Great pain inside the mouth. Two sloughy patches, one-third of an inch in diameter, inside the right cheek, one opposite the upper and one opposite the lower molars. There is also a sloughy surface inside the lip, slightly overlapping the middle line, but the greater part is to the right of the median line.

Nov. 5*th.*—Complains to-day of headache and dimness of vision. Dr. Buller reports both eyes to be in a normal condition.

Nov. 12*th.*—Mental condition changed. Melancholic and somewhat noisy. Became discontented and left the hospital.

The effects of valvular disease upon the whole system are well illustrated. The starting point of the endocarditis is by no means clear, but the period at which the failure of compensation began is plainly evident. It dates from four weeks before admission, when dyspnœa with epigastric pain and dropsy of the feet set in. The valvular disease is of old standing, as is shown by the large size of the heart. Evidences of the effects of long-

standing valvular disease upon other organs are afforded by the large size of the liver, which is probably on its way towards ultimate reduction in size; and by albuminuria. The attack of hemiplegia, probably from embolism, and followed by aphasia, occurred under our notice. The most interesting feature of the case was the attack reported as having taken place upon the 24th October. It is difficult to explain such an occurrence except by assuming the occurrence of some interference with the vascular supply of the cord in its lower part. Itchiness of the skin of the abdomen, pain in the back, and paralysis of the sphincter ani, are symptoms pointing to the cord and the loss of knee-jerk, as well as of the superficial abdominal reflexes point in the same direction,

Reviews and Notices of Books.

An Illustrated Encyclopædic Medical Dictionary. Being a dictionary of the technical terms used by writers on Medicine and the Collateral Sciences, in the Latin, English, French and German Languages. By Frank P. Foster, M.D., with the collaboration of numerous other writers. Vol. I, 1888; Vol. II, 1890. New York: D. Appleton & Co.

This is a work, the second volume of which has just appeared, grand in conception and grand in execution. Nothing like it has been published; and it reflects the highest credit on authors and publishers.

In the preface we read: "The time was when almost all important medical writing was in Latin; hence the older medical dictionaries dealt for the most part with Latin terms only. But the science of the present age is recorded in no one language; to learn it, one must at least read its exposition in English, French and German. Each of these languages has its technical words, and words which acquire a special meaning in technical expressions, and it is only with difficulty, if at all, that their meaning can be made out from general dictionaries. This fact points to the need of a medical dictionary including the terms of

the three languages mentioned, as well as those of Latin or Greek origin or form." The editor remarks: "The value of a dictionary seems to me to depend upon its accuracy, the convenience of its arrangement, and its comprehensiveness; and in the preparation of this work those qualities have been esteemed in the order in which they are here enumerated."

With the above all will agree. To illustrate the nature of the work by a single word, "artery." Its pronunciation in English is indicated; then follows the synonyms in Greek, Latin, French, German, Italian and Spanish; its definition, etc. etc. The whole article occupies in print 20 quarto pages, with 25 beautiful illustrations; yet there is no diffuseness. There is no other work in English that we know of that furnishes a similar treatment of this subject which we choose simply by way of illustration. Several volumes of the book are yet to appear. When complete, it will remain as one of the greatest achievements in book-making in an age, as remarkable for publication as many other things. We feel no little pride ourselves in this great American enterprise, and wish it the highest success.

Diseases of the Eye. By EDWARD NETTLESHIP, F.R.C.S., Ophthalmic Surgeon to St. Thomas's Hospital; Surgeon to the Royal London (Moorfield's) Ophthalmic Hospital; late Ophthalmic Surgeon to the Hospital for Sick Children, Great Ormond street. Fourth American from the fifth English Edition, with a chapter on Examination for Color-perception by WILLIAM THOMPSON, M.D., Professor of Ophthalmology in the Jefferson Medical College of Philadelphia, Philadelphia: Lea Brothers & Co. 1890.

This work is written in the clear, concise style which characterize the author in former editions. The volume is but slightly increasod in size, and the number of illustrations remains the same, but several of the old figures have been replaced by new cuts, and Professor Holmgren's well-known plate has been substituted for the colored papers of former editions, New matter of suitable character has been included throughout the work, and important changes are found in the chapter on operations.

The book will prove valuable to both students and practitioners, as the subject is ably treated in as brief space as is consistent with so important a branch of the profession.

Handbook to Dr. Koch's Treatment in Tubercular Disease. By EDWARD F. GRUN, M.R.C.S. and L.R.C.P., and WALTER D. SEVERN, Assoc. Roy. Coll. Sci. London: J. & A. Churchill, New Burlington street.

The authors deserve the greatest credit for being in the field so early with a handbook on Koch's treatment. A full and clear account is given of all the necessary details for carrying out this treatment. Examples are given of the reaction in various tuberculous disease following the injection of the lymph.

The work (about 70 pages) was composed, printed, published and in the hands of the reviewers in the short space of four days, an example of rapid book-building which reflects credit on editors and publishers. The authors studied the process of injection as carried out in the various Berlin kliniks.

A Text-Book of Diseases of the Ear. By DR. JOSEF GRUBER, Vienna. 1 vol., 588 pp. Translated from the second German edition and edited by EDWARD LAW, M.D., and COLEMAN JEWELL, M.B. London: H. K. Lewis.

This book is a welcome addition to the rather scant library of works on the ear in the English language. The volume opens with a full account of the anatomy and physiology of the ear brought up to the latest discoveries. At page 33 the author devotes some space to the interesting subject of spontaneous dehiscences of the tegmen tympani, together with the various theories advanced as to their causation. Gruber holds that they are produced by an excess of that physiological process of absorption to which the air cavities of the temporal bone partly owe their existence. In describing the histological structure of the membrana tympani, he mentions the dendritic fibrous structure first observed by himself and existing in a fine layer just beneath the epithelium of the integument and mucosa.

Further on he describes a peculiar sort of cartilaginous groove

in which the handle of the malleus rests, and into which, and not directly into the handle of the malleus as heretofore believed, are the fibres of the membrana propria inserted.

In speaking of the tensor tympani muscle, Gruber says it is not inserted only into the inner border of the handle, but into the inner margin and anterior surface of the handle of the malleus. In exceptional cases a few fibres run to the posterior surface of the handle. It follows from this that when the muscle contracts the malleus is not only drawn inwards, but is also rotated more or less round its long axis, so that the posterior surface of its handle is directed somewhat outwards.

In the examination of patients' audition, the author insists, among other things, on the interval of time which elapses before the sound is perceived.

On page 133 is an interesting table of the different distances at which the sounds of the various letters of the alphabet can be perceived under the same conditions as marked out by Wolf and Appun.

Passing next to the therapeutics, Gruber describes his method of injection of fluid into the middle ear, through the Eustachian tube, without the use of a catheter. It is rather a ticklish method, and, as he himself says, had better be only used if the catheter for any reason fails.

In speaking of inflammation of the middle ear, six weeks is the limit set for acute idiopathic middle ear catarrh, six months for subacute, and longer than this is chronic. We notice that leeching is still recommended for acute middle ear catarrh, with great hyperæmia, if after a second or third trial no good results any further attempts are useless, for likely secondary changes in the labyrinth have occurred. Gruber also prefers in middle ear catarrh the use of injections of solutions instead of vapours by the Eustachian tube. In regard to diphtheritic otitis media, the path of the infection may be through the Eustachian tube, caused by inflation with the air-ball; a good typical case is described.

There is a very able and interesting article on mastoiditis, and caries and necrosis associated therewith. The subject of

diseases of the labyrinth terminates this valuable and voluminous work.

One noteworthy feature is that the author does not limit himself and his readers to his own views, but freely quotes the views of other authorities on the subject, both as regards treatment and otherwise, thus greatly enhancing the value of the volume. There are many good illustrations and two very fine lithographic-colored sheets of lesions of the membrana tympani. The translation has been ably done, and reads well, being free from the Teutonic idioms so apt to creep into a translation from the German, done even by the best scholar.

The printing and entire get-up is good, and altogether the work reflects the highest credit on the editors and publisher.

The Physician's Visiting List for 1891. Fortieth year of its publication. Philadelphia : P. Blakiston, Son & Co., 1012 Walnut street.

Blakiston's Visiting List has now reached its fortieth year of publication, a sufficient proof of its meeting the wants of medical practitioners. The publishers in this the latest issue have added some new features which will more than ever commend it to physicians.

The Medical Bulletin Visiting List, or Physician's Call Record for 1891. Philadelphia and London : F. A. Davis.

The Medical Bulletin Visiting List will be found well suited for the needs of the busy practitioner.

Society Proceedings.

MONTREAL VETERINARY ASSOCIATION.

Regular Meeting, December 4th, 1890.

THE PRESIDENT, DR. D. MCEACHRAN, IN THE CHAIR.

MR. GEO. MACAULAY showed the fore-leg of a horse where a sloughing condition of the long flexor tendon with extensive phlegmonous inflammation had been caused by a nail entering the frog of the foot.

A communication was read from Dr. L. E. Willyoung, D.V.S., of Rochester, N.Y., upon two outbreaks of poisoning by bitter-sweet berries (*Solanum Dulcamara*—"Woody Night-shade"). The animals affected belonged to two flocks of sheep who were seen to eat freely of the berries in the month of September. About ten per cent. of the whole flock died within twenty-four hours after eating the berries, being fourteen hours after the onset of the symptoms. Many others were taken ill, but recovered. The symptoms were those of violent gastro-enteritis, with delirium and coma in the later stages. Convulsions and paralysis were also observed. A number of post-mortems were made, and large quantities of the berries found in the rumen in each case.

The PRESIDENT mentioned cases of sheep being poisoned by eating certain varieties of mushrooms. In one case, where many animals had died, he had procured some of the plants and fed them to sheep, without producing any ill effects; this he thought was because the mushrooms were allowed to dry before they were experimented with.

DR. WYATT JOHNSTON reported five autopsies he had performed upon horses dying after an illness of a few days with symptoms resembling those of spinal meningitis. In none of the cases was any lesion of the cord discoverable. In two instances, thinking that the condition might be one analogous to rabies, he had made sub-dural inoculation in rabbits, using an emulsion of the medulla oblongata in sterilized bouillon, two minims being injected. The animals remained in perfect health. The disease

seemed to be toxic rather than inflammatory, and was possibly of septic origin. A careful clinical study of such cases would probably show them to be distinct from meningitis, though at present they were confounded with them.

Mr. T. C. Simpson reported the results of a microscopic examination of the lungs in seven cases of pneumonia in the horse. The work was done in the pathological laboratory of McGill University. The sections were all cut in paraffin and of a uniform thickness of, at least, 15 μ, and in most cases of 10 μ. The cases differed widely in character. In two (7 and 6) the condition was analogous to that found in acute croupous pneumonia in man. In a case of so-called embolic pneumonia, the lung had presented numerous areas of hæmorrhagic infarction, but no thrombi were found in the veins in right heart. The smaller vessels in the affected areas were filled with granular and white cell thrombi, which in some cases were distinctly laminated; no disease was recognizable in the walls of these vessels. The thrombi nowhere contained any large number of micro-organisms.

In a case of "multiple necrosing pneumonia," with formation of numerous small, ragged, recent cavities, these were surrounded by a zone of desquamative catarrhal consolidation, the exudate being composed entirely of large flat cells, apparently proliferated alveolar epithelium. These were in a condition of coagulative necrosis. Surrounding these areas was a zone of small cell infiltration (demarcation).

In a case of aspiration pneumonia, where death with symptoms of urgent dyspnœa followed within forty-eight hours the clumsy administration of a drench, the lungs were found to present innumerable small areas of hæmorrhage (pulmonary apoplexy). The bronchi were much reddened. The pulmonary vessels were free from obstruction. No extravasations were found in any other parts of the body. Microscopical examination of the hæmorrhagic areas showed that the blood lay chiefly within the alveoli. In many places the alveolar walls presented defects, large spaces occurring where 5, 10, or even 15 alveoli communicated freely with one another. Most of these contained blood,

others were empty. There was marked acute bronchitis and peribronchitis in the smallest tubes. The arteries were free from thrombosis, and their walls showed no degeneration, rendering it probable that the hemorrhage was due to rupture of the capillaries from laceration of the alveolar walls (caused by violent coughing).

In a case of pleurisy of about twelve days standing, the exudate in the visceral pleura was sharply divided into a narrow superficial zone (·5 mm.) and a broader deep zone (1 cm.) ; the deeper zone contained numerous spindle-shaped cells and small vascular loops. The superficial zone was characterized by the presence of great numbers of large flattened cells apparently endothelial in origin. The nuclei in these cells stained deeply, and appeared to be proliferating.

OTTAWA MEDICO-CHIRURGICAL SOCIETY.

Regular Meeting, Nov. 14th, 1890.

DR. HORSEY, PRESIDENT, IN THE CHAIR.

The PRESIDENT presented a man, aged 70, on whom he had operated for cataract four weeks previously, and who could now read very well with lenses of 14 dioptres.

DR. EDWARDS described a case of *Hœmoptysis* occurring in a lad, 8 years of age, and probably induced by over-exertion and excitement. He had had several previous attacks of epistaxis and one of hæmoptysis. The hemorrhage was controlled by ergot, gallic acid, and acetate of lead. He referred to another case occurring in an adult after severe exertion, and one occurring in a woman with valvular disease, during her second confinement. Dr. Edwards spoke of the prevalence of phthisis among the Indians of the North-West, and the frequency with which it was preceded by hæmoptysis. As to the treatment, he had found ergot, turpentine, quinine in 10 to 15 gr. doses, and gallic acid the most useful remedies. Having recently had occasion to use morphia hypodermically in post-partum hemorrhage with most satisfactory results, as advised by Dr. H. P. Wright, he thought it might also prove of service in hæmoptysis,

though he had no experience of it. He did not favor the use of emetics or venesection.

Dr. Robert Bell confirmed Dr. Edwards' statement regarding the prevalence of phthisis among the Indians of the North-West.

Sir James Grant considered Ottawa singularly favored as regurded the comparative infrequency of phthisis, which he thought due to the exhalations from the pine lumber.

Dr. J. A. Grant thought the prevalence of phthisis among the Indians might possibly be accounted for by infection through the bacillus tuberculosis.

Dr. Prevost repeated the views he had advanced in a previous paper regarding the cause of hæmoptysis, which were to the effect that every case of hæmoptysis not depending on cardiac disease, or supplementary, was due to the presence of tubercle in the lung. He believed this in spite of a case mentioned, in which the party referred to had had a severe hemorrhage twelve years ago, but had as yet had no return, and was apparently in good health. He thought, even though the disease might remain quiescent for a number of years, it would eventually light up again.

Dr. Wright could not quite concur with Dr. Prevost. He thought if, after four or five years, there was no return of the hæmoptysis, and no physical signs were present, he would be justified in pronouncing the patient cured. Dr. Wright had not used morphia hypodermically in hæmoptysis, but had used it with very satisfactory results, in the dose of half a grain, in post-partum hemorrhage. In fact, though at times he had been obliged to repeat the dose, he had never failed to obtain a good effect from its use in this form of hemorrhage in connection with hot douches.

Dr. Garrow had been led to believe opium was our sheet anchor in hæmoptysis; it acted by slowing the heart and lessening the nervous excitability.

Dr. Edwards again referred to the frequency of hæmoptysis and prevalence of phthisis among the Indians, and stated that everything was being done by the Government to endeavor to

isolate cases and provide suitable means for carrying out their treatment. The Indians, however, were very difficult to deal with.

In summing up, the PRESIDENT admitted that while phthisis was the chief cause of hæmoptysis, he did not think all cases not connected with cardiac disease could be considered as due to the presence of tubercle. He pointed out that the pulmonary systemic circulations were distinct, and that, theoretically, aconite, which lowered the general blood pressure, should act better than ergot.

Selections.

The Historical Development of Therapeutics.—It is well sometimes, even for the most progressive of us, to stand still and review what has been done in the past. The laborious and earnest work of observers of the olden time is apt to be forgotten in the excitement of new things and new ideas. During this century the science and art of medicine have seen as many changes and advances as perhaps any other department of practical knowledge ; since, indeed, medicine has taken what she needed of the rapidly developing sciences of physics, chemistry, and biology. The mode of progress of one branch of medicine—therapeutics, the aim and end of medical science—was the subject of an interesting address given by Professor Oscar Liebreich in 1887. Virchow has affirmed that all the lasting progresses in medicine have been made by anatomical discoveries, and many examples are familiar to all of the truth of this, such as the discovery of the capillaries by Malpighi, and of the cell by Schwann. But such a statement is not the whole truth ; as Liebreich shows in his address, many physiological discoveries have been epoch-marking, especially in their bearing on the art of therapeutics.

Ancient therapeutics were pure empiricism ; and there are not a few who still hold that this is the chief element in the modern art. This may be so, but the development of physiology and of its daughter science pharmacology has led to the hope that empiricism will give way to rational treatment, art to science.

The vicissitudes through which drugs have gone are in many instances not only interesting, but instructive. Pliny, for example, recommended the use of mint, since it healed a diseased spleen when it was eaten from the growing plant nine days in succession. But he also states that it increases the appetite, and, when inhaled, improves the condition of the diseased nasal cavities, and when applied to the forehead relieves headache. It was eighteen centuries later when menthol was brought from China and utilised in the treatment of migraine, for some forms of which it is an efficacious remedy.

The soporific and lethal properties of opium were also known to Pliny; but the drug, from causes imperfectly known, became degraded. It was for a time an ingredient in *Theriacum*, a favorite remedy for all diseases in ancient days. The use of opium seems, however, to have been forgotten until Paracelsus introduced laudanum, and since his time it has been regularly employed in medicine. Its present importance is evident to all. Many other instances (coca, cinchona, etc.) might be cited of the accidental introduction into medicine of drugs, which have become, as investigation of their properties progressed, of great importance in the treatment of disease. What modern science has done, however, is to take these drugs and investigate them so as to render their employment more judicious. This is still one of the aims of pharmacology. Here it is that physiology comes in, and the words of Mitscherlich (1847) on the subject are well worth quoting:

"The changes in the function of an organ are the most important aids to the explanation of the action of a drug. In a large number of good observations there are many certain results obtained, and, on the other hand, many imperfect and false conclusions as to the action of drugs; so that for the correct understanding of the effect of a drug not only must its action be observed on the function of the brain, spinal cord, the senses, muscles, digestion, circulation, respiration, micturition, secretion and excretion, but also on the body as a whole."

This is naturally a point of view from which the ancients (or, indeed, the exponents of medicine till quite modern times) could

not regard drugs; they had not the guiding light of physiology. An excellent example, illustrative of this, is found in digitalis. Fuchsius, of Tübingen, appears to be the first medical writer who recommended the drug (1542), but great uncertainty as to its utility prevailed, so that, although it was included in the *London Pharmacopœia* published at the commencement of the eighteenth century, it was omitted from the 1746 edition, and was not reinstated until forty-four years after. This was after Withering had published an article (1775) on the efficacy of digitalis in the treatment of dropsy. Withering appears also to have had a clear idea as to the direct action of the drug on the heart. Our modern knowledge of the action of digitalis dates from Ed. Weber's researches on the influence of the vagus on the heart, and the subsequent researches of L. Traube working with digitalis. We have from these and more recent observations a clearer notion, not only of the exact mode of action of the drug, but of its dosage and its dangers; and as a corollary we have the introduction of strophanthus and other cardiac remedies, the use of which in practical medicine is the outcome of pharmacological research.

Physiology has, therefore, been of service to therapeutics, but chemistry has advanced practical medicine to a great, if not greater, extent. Paracelsus may be looked upon as the "reformer" who first brought chemistry into touch with therapeutics. Chemistry was then alchemy, and was crystallising, although very slowly, from the impure mother liquid. Paracelsus looked to alchemy to discover what of virtue and power there resided in remedies ("was Tugent und Krafft in der Arzney sey"). Modern chemistry has done this, and in two chief ways. The methods of chemical analysis have been the means of separating and purifying the active ingredients of a drug, and these purified products may be applied as efficiently as, and with greater precision than, the uncertain solutions, extracts, etc., of the crude drug. Not only have the rapidly improved methods of chemical analysis greatly influenced the art of therapeutics, but a stimulus has been given to the study of the subject by the advances made in theoretical chemistry. A little consideration will demonstrate

this. One of the greatest advances of modern chemistry was the discovery of the laws regulating the combination of elements, of radicals, and the construction of the constitutional formulæ of the organic compounds. These discoveries were the result of the work of many observers, from the epoch-making researches of Lavoisier to those of Williamson and Gerhardt in our own generation. It may not at first be quite apparent what connection these results have with therapeutics, what relation the mode of combination of the elements and radicals in an organic compound has with the treatment of disease. But this relation is quite apparent when we consider that by changing the radicals of a compound—that is, by substituting other radicals for those already present—we alter the physiological and therapeutical effect of a substance. The well-known results of the researches of Crum Brown and Fraser may be quoted—one example among many—namely, that the tetanising action of strychnine is changed to a paralysing one, if a methyl-group be added to the molecule of strychnine. This fact, that of the modification of the physiological action by the alteration of the chemical constitution of a substance, constitutes a modern and exceedingly important advance in the science of the treatment of disease. In pharmacology the study of the action of chemical substances (drugs) on the life processes of the cell must play a large part. "The cell," as Virchow clearly says, "is the primary form element of all living manifestations, whether in health or disease; it is that from which all living activity proceeds." The pharmacology of the cell is, however, still a study in embryo; but the researches of Ehrlich and others promise fruitful results.

A review of the history of the development of therapeutics would nót be complete without some reference to the results obtained from the study of antiseptic remedies. The application of these to the treatment of wounds need only be mentioned; but there is another one of these which is as of great importance in therapeutics, namely, the administration of remedies as internal antiseptics. The conditions are not quite the same as when they are applied externally, for when administered as medicines they enter the stomach, where they may be altered in their con-

stitution, and, after entering the circulation, they may form combinations which render them inefficient as antiseptics, or they may be rapidly broken up by the living tissues, and thus rendered impotent. A simple example may be taken of this difference of action of drugs outside and inside the body. Trichinæ outside the body may be readily killed by a solution of picric acid, and yet in cases of trichiniasis the tissues may be made quite yellow with the drug without the disease being affected. Mercuric chloride, the most powerful germicide we possess, is quite powerless against pathogenous organisms such as the anthrax bacilli when growing in the body. This may be partly on account of the small quantity of the drug that it is possible to administer, but it is also partly due, in all probability, to the combination of the drug with the constituents of the body—for example, the proteids. On the other hand, substances which outside the body have only a subordinate influence on micro-organisms are of service in certain acute infectious diseases—quinine and iodoform for example. We look in the future for pharmacology to tell us what these apparent anomalies really mean. The study must be built on a foundation of the physiological action of remedies, and must go hand in hand with a knowledge of pathological changes, structural, chemical, and functional.—*Editorial in British Medical Journal*, Nov. 15.

Acute Pleurisy and Acute Rheumatism.—In 1883 Aufrecht drew attention to the decided results he had obtained in the treatment of acute pleurisy with the salicylates. Recent writers, notably Tetz (in *Therapeutische Monatshefte*, No, 7, 1890), have confirmed his observations. We must allow that the title of a remedy to cure acute pleurisy must be very well substantiated. Acute pleurisies have a way of stopping short without treatment, of beginning with a fierce pain which suddenly abates, and of suddenly going on into the stage of extensive effusion with very little warning pain at all. Nevertheless, the successful results of the administration of salicylates in acute pleurisy, as recorded by these writers, are sufficient to raise in our minds the question as to whether acute rheumatism

and acute pleurisy are not the same disease. Long ago Mr. Hilton, in his admirable lectures on Rest and Pain, pointed out the resemblance between the pleura and pericardium and the joints. The pleural cavity represents a huge joint constantly in motion. It has the two surfaces covered by serous membrane and gliding smoothly upon each other by the aid of a lubricating fluid. And Mr. Hilton went on to apply his law of associated muscular action, nerve supply, and function in the pleura, showing how, when inflammation took place, the nerves of the pleura that were directly in communication with those supplying the intercostal muscles called for cessation of movement, and how the pain felt in the skin over the inflamed area was the agent by which this needed rest was obtained. Practically the same thing occurs in the joint that is inflamed and painful from acute rheumatism. Probably the resemblance between inflammation of a serous membrane and that of a joint would be more striking were the conditions exactly similar. But in the case of the serous membrane complete rest of the opposed surfaces cannot be obtained. The lungs cannot cease taking in air, and the heart cannot stop beating. Probably this accounts for the more fibrinous and adhesive character of the effusion, a further effort of Nature to secure rest. In the case of the joint, immediate rest is secured and the effusion is not adhesive in ordinary cases. The clinical features of acute rheumatism point to a common origin with pleurisy, if not to a practical identity. Many cases of acute articular rheumatism are complicated with effusion into the serous membranes. We say *complicated*, but we mean really that the pleural joint or the pericardial joint has been attacked as well as the wrist joint or the elbow joint. And pleural effusions are of much more frequent occurrence in the course of rheumatism than is commonly supposed. In the ordinary run of cases of acute rheumatism the joints are so very painful that an examination of the bases of the lungs is not quite practicable, and, moreover, there are many practitioners who do not injure themselves with over-zeal in the clinical examination of patients, particularly after a good working diagnosis has once been made out. We are satisfied that, if pleural effusions in rheumatism were

more frequently looked for, they would be oftener found, and those who found them would be more disposed to regard rheumatism as a general attack on all the joints, including the serous membranes. The general tendency to look with suspicion upon "exposed to cold" as a cause for so many diseases, to regard chilliness as an effect consequent upon the poisoning of the system by some external agent, rather than as a cause of disease, makes us skeptical as to whether such a thing as *pleuritis a frigore* exists. It is not more rational to regard it as being due to some inherent tendency in the individual to inflammations of an arthritic form, and to infer that, when pleurisy occurs alone, it simply means that only one joint is affected, or perhaps that the main attack has been upon one joint, the others escaping lightly? The frequent occurrence of pleurisy without effusion into other joint cavities might arise from the fact that into the pleura a quantity of fluid may be effused rapidly, while when the joints are the main point of attack but little can make its way into them. To borrow an old expression, the *materies morbi* readily leaves the blood to fill up the pleural cavity, but, attempting to pour itself into a joint, it meets with resistance and seeks an outlet elsewhere. The effects of the salicylates, so well marked in rheumatism, ought to be equally good in this disease, and we trust that many observations will be made on this interesting subject.—*N. Y. Medical Journal.*

Valuable Authority on Sewage Disposal.—At a recent scientific society meeting in London, E., Dr. C. R. Drysdale, F.R.C.S., &c., read a paper on the sewage of London, Paris and Berlin. (*Sanitary Record.*) In his discourse he demonstrated that the only rational and satisfactory method of treating the sewage of large cities was that now employed at Berlin, Paris, Croydon, and at a few other places on a less extensive scale; and its agricultural application on suitable soils. In his opinion London presented a very bad example to other cities in the manner in which it dealt with the sewage of the metropolis by turning at least 150,000,000 gallons daily into the Thames, at the outfalls of Barking and Crossness, and by

unwisely and inadequately dealing with the solid matters. Glasgow and Dublin were even more lamentable in this respect than the metropolis. At the present time Paris had 1,500 acres of land cultivated by small proprietors, who made use of about 20,000,000 tons per annum to irrigate their farms. Some 3,000 acres had also been acquired at Acheres, which it was proposed to cultivate in the same manner; and still another sewage farm was contemplated. The effluents were perfectly pure, and were even drinkable. At Berlin the area of the sewage farms amounted to 19,000 acres. To these the sewage was pumped from twelve pumping stations, through pipes forty inches in diameter, and most of the farms had been under cultivation during the past fifteen years. About two thousand were constantly employed, and not a single case of typhoid occurred during the whole of last year. The general salubrity was vouched for by the fact of two convalescent hospitals having been established on the farms themselves. The crops grown were grass, cereals, roots, potatoes, cabbages, and fruit. Money to the amount of £3,211,000 had been borrowed for successfully dealing with the sewage of 1,500,000 inhabitants, while Sir R. Rawlinson estimated that the present sewage experiments in London with over 5,000,000 inhabitants would cost £10,000,000 sterling for no purpose whatever. The Paris Commission recently sent to Berlin had reported a perfect success, and if the London County Council would send a Commission, their report must be equally satisfactory.

Berlin (from condensed report in *Sanitary News*) is divided into twelve districts, which have each of them its own pumping station, which sends out the sewage of its part of the one and a half million of inhabitants composing the population of Berlin to the different farms purchased by the municipality. These pumping stations sent in the year 1888-89, 44,919,000 cubic metres of water to the farms to be purified there. This means daily, and per head of the population, 103 litres; and as only 64 litres per head are furnished by the water companies daily, 38 litres per head are added from the rain-fall in the city and the various wells of salt and fresh water therein. The total extent of the

farms used for the purification of the sewage is 7,614 hectares, which, at the rate of 2½ acres to the hectare, gives nearly 19,000 acres devoted to this purpose in Berlin. London has not a single acre utilized for the purification of its sewage. The farms are situated partly on the north and partly on the south of Berlin. The southern ones—Osdorf, Heinersdorf, and others—are most beautiful and successful farms, and about 71 per cent. of the ground of these farms is irrigated by the sewage; 96 per cent. of this irrigated part is drained. The length of the pipes which convey the sewage to the farms varies from 964 metres (about five-eighths of a mile) to 18,626 metres, or about 11½ miles, and the diameter of the main tubes varies from one metre to three-quarters of a metre. Once arrived at the farms the diameter of the pipes is lessened, and finally those used to convey the sewage to the fields do not exceed one-fifth of a metre. The conduits end at the highest point of the ground to be irrigated, and the most inclined fields are employed as meadows, whilst the flatter fields are used for the cultivation of roots; and some fields are covered in winter time by sewage for some months, and then used for the production of cereals in spring. The water is conveyed from the highest point of the field by ditches, half a metre in depth, and where root crops are concerned the sewage is allowed only to touch the roots of the plants; but in the case of meadows it flows over the whole surface of the meadow. The idea that such farms become unfit for use in some years by clogging up, and then unable to purify sewage any longer, is known to be erroneous, and after many years of use the sewage water is still only a slightly muddy fluid, and the effluent is pure, clear, and inodorous.

With respect to the expense of the farm, the older portion cost about £8,000, which at 3½ per cent. would require £28,000 as interest on capital. In 1889 these farms yielded less than this to the extent of £16,000, which was all that the city of Berlin had to pay in aid of them, whereas London has to pay an endless amount for the construction of useless tanks at Barking, sludge vessels, etc., and all without raising a blade of grass or a single root by the aid of her sewage.

In Frankfort the cost per head for classifying the sewage was found to be 1.22 mark ; in Wiesbaden, 0.68 mark, and in Berlin only 0.48 mark, or about 5½d. per head of the population per annum. But the machinery used for the purification of sewage where there is no sewage farm goes on continually diminishing in value ; whereas the sewage farms become always more and more valuable as property. So that both with respect to the condition of the effluent and the expense, the Berlin system is vastly superior to the London system. With respect to the effluent, the thirteen years' experience of some of the Berlin farms shows how pure it is, and that it will always remain as pure is now ascertained. The effluent has almost no suspended solids in it, all being removed by filtration through the ground. Sometimes the effluent from the basins contains iron, and in such a case the water may be opaque and like lime-water. There were very few microbes in the effluent. In 100,000 parts of Berlin sewage arriving at Osdorf, there are about 16 parts of ammonia, and in the effluent only a trace of this product. The amount of chloride is not changed by irrigation ; 100,000 parts of sewage require 28 parts of permanganate of potash to oxidize it, and the same quantity of effluent required only two parts of the salt to do so. Of course all sewage contains far more salt than can be utilized by the plants ; but this does not affect the excellent quality of the effluent. Grass lands purify rather better than root crops. Only 1-26th of the phosphoric acid contained in the sewage appears in the effluent.

The city of Berlin has taken advantage of the existence of the farms to employ a number of persons in agriculture. Some of the workmen receive in wages and kind of value of about £60 yearly. The day laborers receive about £20, and women about £10, with lodging and farm produce, which makes the yearly income of each family about £60. There are also about 900 paupers who are employed on the farms according to their powers. The produce of their labor is estimated as about worth one-fourth of that of the ordinary laborers. The health of the population employed on the farms has been examined by Professor Virchow and found to be excellent. Thus, in 1889,

there was not a single case of typhoid fever among them, although that disease prevailed in Berlin for a time in that year. The population consisted of 1,960 persons. There were only thirteen deaths in the year, and of these only three were grown up persons, the rest were children. There was very little contagious disease among the employees ; a few cases of measles, diphtheria and croup were mentioned. There was no evidence of any disease caused by the irrigations. Altogether, the experiment made in Berlin, and which might equally be made in London, is a splendid success. It is true that the situation of Berlin, in the midst of a plain, is favorable ; but, as Dr. Carpenter of Croydon has often taught, all soils can be used for irrigation if only too much is not put upon a soil that is unsuited for heavy doses of sewage. Eventually, said Dr. Drysdale, I feel sure that all cities will imitate Berlin. Only it is humiliating to think that London should lie so much in the rear of scientific practice, and require so much wakening up to make it attend to its own best interests in this matter.—*Canada Health Journal.*

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NOTES ON KOCH'S TREATMENT.

German, French and English journals are full of the results of the injection of Koch's lymph in cases of tuberculosis. The most recent experiences point to the urgent necessity for caution in the employment of the fluid in cases of general tuberculosis, several fatal cases having occurred as the direct result of the injection.

One of the most interesting communications made public up to the present, is the report to the Société Médicale des Hôpitaux by three of its members, who spent some time in Berlin studying the subject.

Le Bulletin Medical for Dec. 7th contains these reports, a synopsis of which we here append:

Mr. Thibierge reported on the influences of the lymph in cases of lupus. He especially refers to the ulterior effects of the injection on the lupus patches. After a certain number of injections the local effects gradually decrease in spite of a continuation and increase in the dose injected. The redness, secretion and tumefaction gradually diminish, until finally all traces of new tissue disappear, its place being taken by a smooth scar.

As only a period of two months has passed since the first case of lupus was treated in this way, it is too early to decide as to the permanency of the cure. A temporary cure it no doubt is. In most cases from twelve to twenty injections are sufficient to bring about the disappearance of the lupus tissue.

M. Cuffer reported on the results obtained in tuberculosis of the lungs. He noticed in a number of cases a primary fall of the temperature (95° Fah.) before the stage of reaction set in.

During this stage the pulse is soft and compressible and the heart beats weak.

When reaction sets in, we have two classes of symptoms. (1) Those arising from the peritubercular congestion in the lungs. (2) Those arising from the general disturbance.

The former or local reaction is characterized by a dyspnœa more or less pronounced, due to the congestion; on auscultation fine râles are heard. Several cases have now been recorded where, in addition to the local congestion, there has been evidence of quiescent tubercular infiltrations undergoing rapid destructive changes. One case is reported of a tuberculous infiltration of the right apex, where, after the fourth injection, unmistakable signs of acute miliary tuberculosis were seen. M. Cuffer concludes that there are two forms of local reactions, one characterized by simple congestion, and another resulting in intensification of the tubercular process.

It is doubtful whether the alleged diagnostic value of Koch's lymph will come up to early expectations, a number of cases having been reported of tuberculosis where neither a local or general reaction has followed repeated doses. It is maintained by some that reactions have followed the use of minimum doses in other diseases. A little more experience will clear up this point. As to the time of the reaction setting in, cases vary generally. It has been noticed as early as three hours, and in a few cases as late as fifteen hours.

URATOSIS.

The term *Uratosis* has been suggested by Sir Wm. Roberts to designate that disordered state of nutrition characterized by the deposition of the crystalline urates in the tissues or fluids of the body. By adopting this nomenclature, several advantages, it is claimed, would follow. First, a distinction would be clearly drawn between the effects of an excess of uric acid in the blood and uric acid precipitated as crystalline urate. What, if any, pathological significance the former condition has was at present unknown. The serious consequence following the latter state were well recognized. Excess of uric acid in the blood was only an exaggeration of a normal state, while deposition of crystalline urates was, in any quan-

tity, a pathological condition. Another advantage claimed is that we would be better able to estimate the relation between the different causes that give rise to uratic deposits. When speaking of "ordinary" gout and "saturnine" gout, we use terms which, in the opinion of Sir Wm. Roberts, would be more truly expressed by "gouty uratosis" and "saturnine uratosis." It being much more likely that the gouty diathesis and lead poisoning, while differing in other respects, had one tendency or vice in common, viz., the tendency to the deposition of the crystalline urates or uratosis.

The separation of the effects of the deposition of the crystalline urates from simple increase of uric acid in the blood was of importance from a therapeutic point of view. In the former, the danger of precipitation, especially in the kidneys, was of a very grave character and called for immediate treatment. By the employment of alkaline remedies, we are enabled to postpone for a long period this deposition, and thereby gain time which should be employed in combating the essential cause.

—In these days when cure by injections or inoculations is attracting such widespread attention, it may be of interest to note that so far back as 1863 Dr. James Grant of Ottawa (now Sir James Grant) applied ordinary vaccination for the cure of skin disease, and with evidence of success. His paper on the subject may be found in the *Medical Times and Gazette* for the year above mentioned. In some of the cases various remedies had been administered as alterative with apparently little benefit, but after vaccination the disease disappeared in a comparatively short time. In other cases no remedy other than the vaccination was tried and healing followed. From all the conclusion is drawn that the vaccination acted as an alterative on the nutrition. Apparently this is just what Koch's lymph does, though it would seem that it is peculiar in selecting the tissues that are the site of the specific disease.

—J. B. Lawford, F.R.C.S., of Montreal, who graduated at McGill in 1879, and who was Holmes Medallist of his year, has been appointed assistant surgeon to the Royal Ophthalmic Hospital, Moorfields.

KOCH'S TREATMENT OF TUBERCULOSIS IN MONTREAL.

The authorities of McGill University having been favored with a supply of Koch's lymph, experiments were at once instituted in the wards of the Montreal General Hospital by Drs. Roddick, Shepherd, Bell and MacDonnell. For the following report of these experiments we are indebted to Dr. Robt. E. McKechnie, House Surgeon :—

Case I.—Mrs. P., an old woman, has had facial lupus for eight or ten years. The diseased area has been scraped and cauterized at different times, temporarily arresting but not curing the disease. At present, the diseased area is as large as the palm of the hand, covering the left temporal, malar and upper part of buccal regions, also involving the outer canthus of the eye, with the outer half of the lids.

Dec 19th.—At 10.45 A.M. $\frac{1}{10}$ cm. of a 1 per cent. solution of Koch's lymph was injected below her right scapula. She was then put to bed; hourly temperatures to be taken. At 3 P.M. a blush appeared on bridge of nose and on left cheek. This began to fade at 5 P.M., but did not entirely disappear, as a faint blush persisted over the left lower jaw. Patient experienced no chill and no elevation of temperature.

Dec. 20th.—At 10.30 A.M. $\frac{2}{10}$ cm. of the same solution was injected. Temperature began a definite rise at 4 P.M., reaching the maximum of $102\frac{1}{5}°$ at imdnight. There was no chill, nor was nausea or headache experienced. Patient wore a dull heavy expression all day. At 3 P.M. a blush appeared below the diseased area, over lower jaw; while at 4 P.M., coincidently with the beginning of increased temperature, the affected tissues became decidedly redder in color, but showed no tendency to necrotic change. This redness died away during the night. At 11 P.M. the patient was feelIng heavy, but not sick; and her pulse very irregular in volume.

Dec. 21st.—At 10.40 A.M. $\frac{1}{10}$ ccm. of same dilution of the lymph was injected. The same local changes followed this injection, but were not as intense, and the highest temperature reached was $100\frac{1}{5}°$ at 8 P.M.

Dec. 22nd.—At 10.50 A.M. $\frac{6}{10}$ ccm. of the same dilution was injected. Temperature began to rise at 4 P.M., reaching $102\frac{1}{5}°$ at midnight, steadily declining after that. Patient was very dull all day and inclined to sleep; also felt sick at her stomach. Locally the changes were as before, but it is now noticed that there is a tendency to elevation of the diseased patch by formation of crusts of dried secretion. This is especially noticed about the outer half of the affected eyelids, where the crusts are about $\frac{1}{4}$-inch in thickness.

Dec. 23rd.—Patient was not injected to-day as temperature was still above normal. She was drowsy all day, with no appetite; but as

evening came on with normal temperature, she felt better. A decided increase in the secretion, from the diseased tissues at outer part of the left eyelids, has been remarked all day.

Injections are to be continued in this case, in gradually increasing doses, till definite results are obtained.

Case II.—M., a man aged 30, with a tuberculous testicle and the same disease of the bladder.

Dec. 20th.—At 10.45 N.M. $\frac{3}{20}$ ccm. of the 1–100 dilution of lymph was injected. No definite reaction followed this.

Dec. 21st.—At 10.49 A.M. $\frac{1}{10}$ ccm. of the same solution was injected. At 2.15 P.M. he had a slight chill, and felt cold for over an hour. Temperature was rising at this time, reaching its maximum of $102\frac{4}{5}°$ at 7 P.M. Almost coincidently with the increase of temperature was an increase of pus in the urine, and the appearance of small quantities of blood. Patient felt heavy, with no appetite; tongue furred heavily. No alteration had yet yet appeared in the affected testicle.

Dec. 22nd.—No injection was given to-day, as the temperature in the morning was still 100°, and patient felt very dull and sick. He complained during the night of his head feeling very big. Temperature ran along evenly till 6 P.M., when it began to decline. At 5 P.M. the affected testicle began to pain, and on examination was found tender to the touch, and swelled about one-third larger than the day before.

Dec. 23rd.—The reaction of Dec. 21st ended at 4 this M.M., when the normal temperature was reached. The injection was not repeated to-day. The affected testicle is still tender, and pain runs up both groins from it, but most marked on the affected side.

Case III.—J. L., a girl of 15; has a tuberculous disease of the skin. The diseased patches are found on the face, both arms and hands, and on the right instep. The largest areas are below each eye, where irregularly outlined patches about 2 inches by 1 inch are seen.

Dec. 19th.—At 11 A.M. $\frac{1}{10}$ ccm. of a 1 per cent. dilution of the lymph was injected. At 2.50 P.M. a blush appeared on both cheeks, especially marked on the right. This began to fade at 5 P.M., but never entirely disappeared from the right cheek. No constitutional symptoms appeared to-day; temperature remained normal.

Dec 20th.—At 10.35 A.M. $\frac{2}{10}$ of same dilution was injected. A definite rise of temperature began at 4 P.M., reaching its maximum of $101\frac{3}{5}°$ at 11 P.M. No chill was felt at any time, but patient had a severe headache all day, felt very dull, had no appetite, and tongue was heavily furred. At 3 P.M. a deepening in color of the diseased patches on the face was first noticed. This continued till 5 P.M., when the deep color was very marked. The blush noted the day before on both cheeks also appeared and deepened. A few moist spots of exudation ap-

peared on the diseased parts about 4 P.M., but none were remarked later than 8 P.M.

Dec. 21st.—At 10.45 A.M. patient was injected with $\frac{1}{10}$ ccm. of same dilution of lymph. The temperature had just regained the normal from yesterday's rise, and patient was experiencing headache and nausea. The blush on the right cheek was nearly as deep as the previous day. Following this injection no definite change was noted. The temperature was above normal all day, the highest point reached being 101° at 5 P.M. Patient felt miserable all day with headache and nausea. The diseased areas remained deeply injected, but showed no necrotic change.

Dec. 22nd.—At 11 A.M. $\frac{6}{10}$ ccm. of the same solution was injected. The beginning of the rise in temperature was delayed, not occurring till 6 P.M.; and the highest point reached was only $100\frac{3}{5}°$ at 12 P.M. But at 7 P.M. both cheeks were markedly erythematous, and the surfaces of the diseased patches on the face a dark red. At this time the patient had much nausea.

Dec. 23rd.—No injection was repeated to-day, as the temperature was still 100 in the morning. Patient was feeling heavy and dull,—out of sorts generally. The tongue was still moderately coated. The diseased areas on the face showed distinct changes. There was some elevation of their surface, with much increase in the heaping up of scabs. In a few places deeply-seated yellowish-white spots the size of a hemp seed were seen, indicating necrotic changes. One of the patches, on the back of the left hand, discharged a small quantity of sero-pus and began to scab.

In addition to the foregoing, the following cases have also been put under treatment, but are not yet ready to be reported:

A case of chronic cystitis was injected for diagnostic purposes.

A case of moderate tuberculous involvement of the lungs with anal fistula.

A case of tuberculous testicle in a child, with disease of the bone in addition.

In none of these six cases has Koch's dose for lupus of .01 ccm. of the original lymph been reached, the nearest approach to it being $\frac{6}{10}$ths of that quantity. The dose started with is that recommended for phthisis.

The treatment has only been begun in these cases, and the foregoing notes merely show some of the earliest symptoms. Results, definite in character, will be looked for later on.

THE ROYAL SOCIETY OF CANADA.

To the Editors of The Montreal Medical Journal.

Gentlemen,—It is the custom in England to publish in some of the journals the claims, especially on the score of original work, of all candidates for election to the Royal Society; the latter being regarded as about the highest honor that can be conferred on a scientific man. So far as I know, this has never been the case as regards the Royal Society of Canada, though the fellows have been made aware of the status of candidates. With a view of initiating so good a custom as that prevailing in England, I furnished you with a list of my own papers last spring *after* my election to the Royal Society of Canada, so that anyone might judge for himself of the merits of the case. The list was not published till a few weeks ago, and then without one word of explanation. After trying to make matters clear again, I found that the only notice in explanation of the appearance of the list is a meagre paragraph at the close of the last page of the December number of the Journal, and which seems to imply that I might be a candidate, but certainly had not become a fellow; with, moreover, no very complimentary reference to the Royal Society. Since the Society is made up largely of the leading scientific men of the country, and has published a good many quarto volumes of proceedings, it would appear that it has at least some claim to respect. How many volumes of proceedings has the Canada Medical Association published? My election to the Royal Society was unsought by me, nor did I solicit a single vote; therefore, I the more appreciate the honor so distinguished a body has done me.

I have long been aware that editorial ways were peculiar; but that condition of the nerve centres which has led to such dislocations, isolations and mystifications, without any corresponding gain in differentiation or evolution, is something which it is past my knowledge of physiology to explain. However, I hope it does not betoken any serious impending loss of cerebral equipoise on either your part or mine, and I trust, gentlemen, that you will appreciate my efforts to reach a scientific solution even under such unfavorable circumstances.

Truly yours, Wesley Mills.

Physiological Laboratory,
McGill University.

THE

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Original Communications.

A RARE FORM OF KIDNEY TUMOR.

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AND

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(*Read before the Medico-Chirurgical Society of Montreal.*)

The subject of the present communication was a French-Canadian woman, aged 39 years. She was admitted to hospital on the 15th of September last (1890), suffering from an irregular fever, exhausting diarrhœa, and copious night sweats. She had also a tumor in the right lumbar region of the abdomen, which was thought to be in some way connected with her constitutional symptoms. Her family history showed a strongly marked tubercular tendency, having lost two brothers from phthisis; one sister still living is the subject of phthisis, and another sister died at the age of 25 years from some abdominal affection called "inflammation of the bowels."

Patient had been married at the age of 15 years, and was the mother of seven strong and healthy children, all living,—the eldest aged 23 years and the youngest 14 months. She had always been strong and healthy until the commencement of her present illness, which may be described in two stages. In 1886, while nursing a child four months old, she had all the symptoms of commencing pregnancy—(cessation of menstruation, morning vomiting, and the sensation of movements of the child). Shortly

after the appearance of this latter symptom she was seized with sudden pains about the right inguinal region, which passed off in a few hours and did not recur. The next day, and at times for several months afterwards, the urine appeared bloody, being quite clear in the intervals. Shortly after this occurrence (in the fall of 1885) she noticed a small tumor in the right lumbar region of the abdomen, about the size of a hen's egg. This was hard and painless, and increased in size slowly until December 1889, when a new train of symptoms supervened. Up to this latter date she considered herself in good health, and apparently with reason, as she was delivered of a healthy child in August, 1889, and recovered perfectly from her confinement. At this time, also, she weighed 165 lbs. About Christmas, 1889, she became feverish, emaciation began, and she suffered from a hacking cough. These symptoms continued till February 1890, when she came under the care of Dr. C. L. Cotton, of Cowansville, who has kindly written me the following account of her illness up to the date of her admission to hospital. He says, in his letter dated October 10th, 1890: "Mrs. A. first consulted me about two years ago for amenorrhœa. At that time I discovered the tumor, which was about as large as at the time of her admission to hospital. . . . . The menstrual function was restored and she improved very much. During the period that she was under my observation the tumor did not appear to give her any trouble. She became pregnant, and was safely delivered at full term by Dr. Brown of Knowlton. I saw nothing more of her until last February, when she sent for me. . . . . She had then the appearance of a person in about the fourth week of a protracted typhoid, though I did not make a diagnosis at the time, as I felt very much puzzled. There was much pain and some tenderness over the tumor, and a very exhausting diarrhœa, with an irregular fever. From that time until you saw her she continued in much the same condition, sometimes free from fever for two or three weeks, when she picked up enough strength to drive out; at other times weakened with night sweats and fever. At one time during the summer she had another hemorrhage, followed by a most offensive diarrhœa containing sloughy

material. I kept the diarrhœa in control with large doses of opium and sulphuric acid. The appetite was very irregular, and severe night sweats weakened her much. At no time did I notice anything in the urine to lead me to think that the kidney was involved." On admission, patient was noted as greatly emaciated, anæmic and nervous, hair falling, appetite poor, tongue clean and moist; bowels loose, six or seven stools per day. Motions more frequent at night; stools loose, but show no special characters. Night sweats. Slight frequency of micturition, six to eight times in twenty-four hours, but not accompanied by pain. Urine normal, clear, and free from sugar and albumen. Deficient chest expansion; diminished resonance over front of chest and prolonged expiratory sounds. Heart-sounds normal, but weak. Pulse 105; temperature ranging from 97½° to 103°F. Skin of a dusky and unhealthy appearance.

The tumor, which occupies the right lumbar region of the abdomen, is about as large as the head of a newly-born infant, freely movable both vertically and laterally, only slightly tender on manipulation. Percussion discovers the colon in front of the tumor. Tumor is smooth and firm, evidently solid, and can be easily manipulated through the lax and thin abdominal walls. Careful examination failed to establish any connection with the pelvic organs, although it is noted, that the os is low, and behind the os is a firm body about the size of an almond, which is painful on pressure. Slightly to the left of the os, and behind it, a larger firm body can be felt, like the fundus uteri. Patient was kept under observation till the 2nd of October, during which time all the symptoms (as already described) persisted. It became evident that she was suffering from some form of toxic absorption, of which the tumor seemed to be the *fons et origo*. No diagnosis had been made as to the nature of the mass, and it was decided to expose it as a preliminary step and then be guided by the knowledge obtained as to its treatment. Although the tumor was in the situation of the kidney, the absence of kidney symptoms and the presence of a well-marked septicæmic condition seemed to exclude the diagnosis of kidney tumor. My own feeling was that it was probably of tubercular nature, and

in connection with the colon or cæcum. The case was desperate, and clearly hopeless unless the toxic focus could be removed. Operation was therefore decided upon. The patient was prepared by evacuating the bowels and restricting the diet to a moderate quantity of milk for twenty-four hours before operation.

On the 4th of October, assisted by Dr. Roddick, I exposed the tumor by a vertical incision directly over it and about an inch to the right of the rectus muscle. It was at once evident that it was a kidney tumor. An aspirating needle was introduced, but withdrew only a little blood and permitted the escape of a distinctly fæcal odor. Before proceeding further the left kidney was felt by the hand of the operator within the peritoneal cavity and found to be normal. The peritoneum (posteriorly) was then incised and the colon displaced upwards. The tumor was covered by a thick, firm capsule, which was carefully peeled off, the vessels and ureter ligatured, and the tumor removed. The capsule was closely adherent to the surrounding structures, especially to a knuckle of the ileum in its lower part, and to the ascending colon. In removing the capsule the fæcal odor was exceedingly powerful and penetrating, and was appreciable on the hands of the operator for forty-eight hours afterwards in spite of the most diligent efforts to remove it. There was no bleeding to speak of,—the site from which the mass had been removed was carefully cleansed, the capsule was sutured to a limited area of the abdominal wound and packed with iodoform gauze. The operation was completed in less than an hour, and the patient was removed to her ward in a very weak condition. She rallied, however, and continued pretty nearly as well as before operation for sixteen hours, when she died.

This case is very unusual—in fact, in my own experience, unique both in its pathology and in the symptoms which it gave rise to. In Dr. Cotton's letter from which I have already quoted he says: "The only opinion that I could form was that the tumor (whatever it was) had formed an attachment to the bowel, and that a sloughing process was going on in the tumor and discharging through the bowels at the same time, causing all the symptoms of systemic poisoning which she had more or less all

summer. The case was very puzzling. The starting point of her present illness was undoubtedly when the renal tumor became inflamed about last Christmas, as she had been very well after her confinement for three or four months. This probably went into a gangrenous condition, and blood-poisoning resulted:" With this opinion I entirely agree, with one exception, and that is with regard to the communication of the interior of the tumor with the bowel. Although the symptoms pointed to this explanation, the post-mortem appearances not only did not support it, but from a careful examination both of the tumor and the attached portions of bowel, this would seem to have been impossible. The notable absence of urinary changes is explained by the peculiar relationship of the kidney proper to the tumor as described in Dr. Johnston's report.

AUTOPSY PERFORMED ELEVEN HOURS AFTER DEATH.

Body that of a middle,aged woman. Subcutaneous fat in fair amount, but firm, dry, and of an orange-yellow color. On the right side of abdomen a recent laparotomy wound extending from the hypochondrium to the iliac region. The edges, kept in apposition by sutures, show no union. The incision opens into a large ill-defined sac in the right flank, about which fibrous adhesions have formed. The inner surface of sac is ragged and necrotic, of a brownish-black color. This discoloration appears due to hemorrhagic infiltration altered by the action of the intestinal gases. The wall of the sac lies in intimate relation with the ascending colon, and is closely adherent to the ileum at a point about six inches above the valve. Although stuffed with iodoform gauze, the sac has a distinctly fæcal odor. The vermiform appendix found free from ulceration. No appearance of present or former fistula in any part of the intestines. The right kidney has been removed. The lower end of right ureter traced down to bladder and found to be normal. Bladder and left ureter normal. Left kidney weighs 160 grammes, is somewhat pale, but seems to be normal. Supra-renal capsules on both sides normal. The right supra-renal lies well above the upper extremity of the sac.

Lungs: A small fibro-caseous nodule at each apex, that in the right lung, surrounded by a circumscribed eruption of miliary tubercles, covering the adjoining pleura for an area of about a hand's-breadth,

No trace of secondary tumors found in any part of the body. Brain not examined.

REPORT ON TUMOR.

The right kidney was sent to me by Dr. Bell immediately after the operation, and was examined at once in the fresh state. Small portions typical of the different parts were hardened in alcohol and in Muller's fluid, cut in paraffin, and stained in hæmatoxylin.

The kidney and tumor, as received, form a large, uneven, nodular mass weighing 650 grammes (20 oz.), and measuring 13 x 10 x 7.5 cm. Its general appearance is shown in fig. 1. The ureter (q) and vessels,

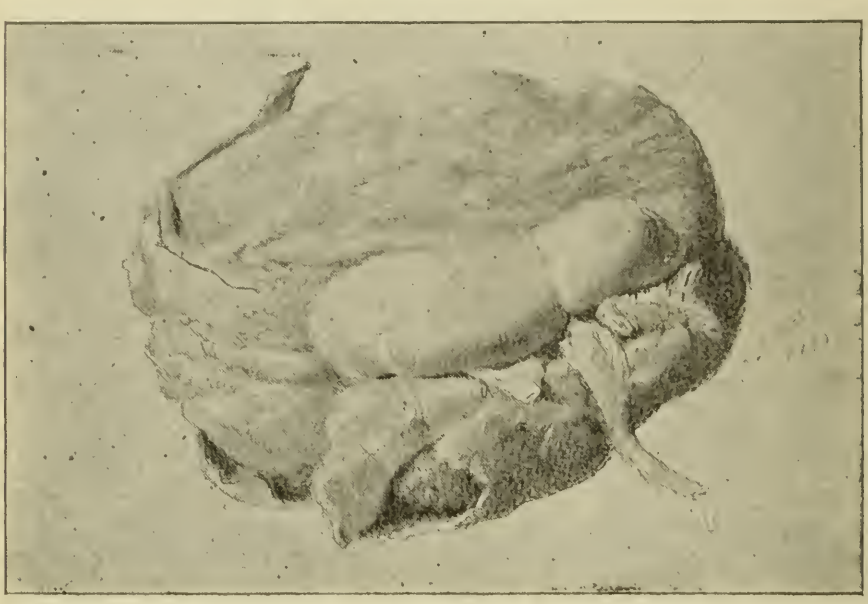

FIG. 1.

enter at the hilus. From this point a narrow zone looking like kidney extends towards the convexity for a distance of 4 cm. anteriorly and 2 cm. posteriorly, and forms less than one-sixth of the entire mass; the remainder is made up of an uneven, nodular growth, opaque-yellow-white in color, which lies within the true capsule (albuginea) of the kidney, but is separated from the renal substance by a narrow, fibrous partition. This growth presents a large central cavity, shown in Fig. 2, containing dirty brownish-red, icherous fluid with an intensely penetrating fæcal odor. In this cavity are several firm, reddish gray masses of blood-clot, one being as large as an egg. The surface of the cavity is covered with a thick, shaggy, greenish-gray, diphtheritic-looking membrane, and shows areas of hemorrhagic infiltration. The contour of the inner surface (shown in Fig. 2) is uneven, consisting of hemispherical, rounded, lobulated projections, varying from 1 cm. to 4 cm. in diameter, and recalling in appearance a cotyledonous placenta. This cavity appears to be a pre-existing cyst, whose surface has recently necrosed. The wall of this cyst varies from 2 mm. to 4 cm. in

thickness, and forms the bulk of the tumor. It is covered externally with a fibrous capsule continuous with that of the kidney. In some places the cut surface of the growth is firm and smooth, of a pale yellow color, and seems œdematous. In others it is softened, and studded with numerous small cysts (not shown in the figure), ranging from a size barely visible to 1 cm. in diameter. These cysts contain in some cases an opalescent fluid, in others blood or a yellowish-brown turbid juice. Their inner surface is rough, soft and ragged.

At one point near the upper end of the cavity a ragged aperture exists, partially stopped by a large mass of blood-clot. Through this rent (shown at x in Fig. 1 and by a probe passed through it in Fig. 2) the cavity of the tumor communicated directly with the perinephritic sac.

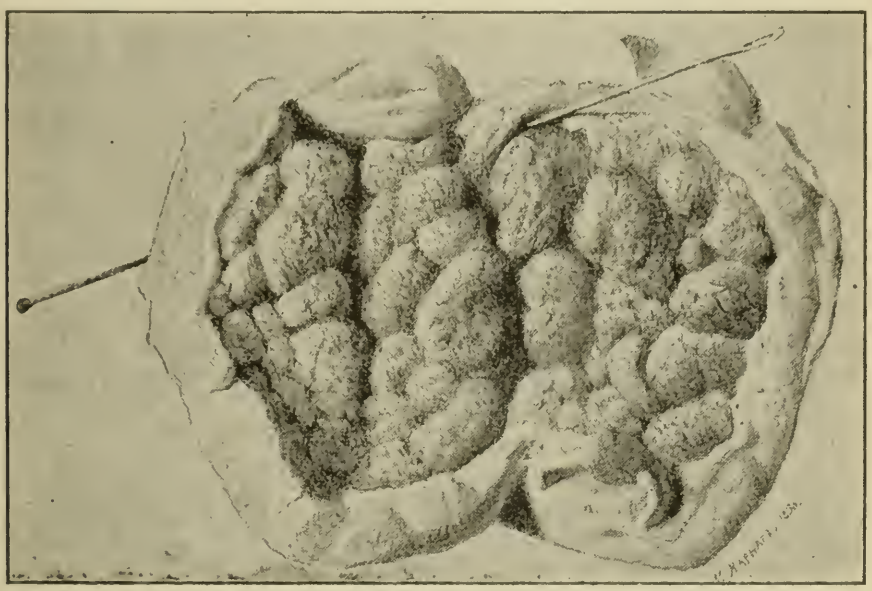

Fig. 2.

On slitting up the ureter, the pelvis of the kidney found to have no connection either with the central cavity or any other part of the tumor, but fine probes passed into the renal vessels can be felt within the cyst wall. None of these vessels seem to be thrombosed. The kidney is small and flattened, evidently from pressure. This reduction in volume is uniform in both cortex and medulla. The capsule is readily peeled off, leaving a smooth surface studded with a number of small, sharply defined hemorrhagic points, not projecting beyond the adjoining tissue, seen on incision to be wedge-shaped, with the base outwards, evidently recent hemorrhagic infarcts. The organ cuts with increased resistance.

Microscopic Examination.—On scraping the cut surface of the firm, smooth parts of the tumor, a turbid juice obtained, containing clumps

of close-set polygonal epithelial cells, some of which contain fat drops. From the cystic portion, in addition to these, a number of large round, flattened cells were found, containing yellow-brown pigment granules, and in some cases one or more red blood corpuscles, either alone or in addition to the pigment. These are evidently cells which have absorbed portions of extravasated blood. In regions of advanced necrotic changes, the scraping contained only fatty debris and sheaves of large needle-shaped (tyrosin?) crystals, with large numbers of bacteria. Sections of the hardened tissue from the firm, smooth areas show an abundant, but extremely delicate, reticular fibrous stroma arranged so as to enclose round or oval alveolar spaces containing a variable number of large polygonal epithelial cells. The dimensions of these spaces vary from 0.05 mm. to 0.5 mm. in their longest axis. The larger contain as many as from 10 to 20 epithelial cells, the majority, however, only three or four, and in some cases small alveolar pockets are seen containing but a single epithelial cell. The large alveoli are lined by a single layer of epithelium directly in contact with the stroma, with no visible basement membrane, leaving a central space which is either empty, or occupied by a cell mass not attached to the wall. In the smaller alveoli a lumen is seldom seen, the three or four cells they contain lying with their edges everywhere in contact. Alveoli of this latter kind form the greater part of the tumor. The majority of the cells are polygonal, but some occur as cubes or flattened cylinders. Their size is fairly uniform, averaging 15 to 20 μ in diameter. The nucleus small (5 μ), round, and centrally placed, usually single. Showed no karyokinetic figures. The cell body consists of clear, transparent, homogenous, apparently structureless, protoplasm. At the border of each cell a distinct, sharply defined, cell-wall appeared to exist in most cases, though it could not be positively determined whether this appearance was not due to delicate filamentous, tendril-like processes from the stroma, passing between the individual cells and encircling them. This latter seemed likely, because in spots where degeneration was commencing the nucleus remained distinct, and, while the cell-body (cytoplasm) became swollen and faintly granular, yet at the border of the cell, this limiting wall was more distinctly seen, and stained more deeply than in the well-nourished areas. In more advanced degeneration the nucleus could be seen lying free within a small pocket, enclosed by a border corresponding apparently to this cell-wall, but directly continuous with the stroma. Where the degeneration was still more advanced, nothing could be seen but a delicate fibrillated meshwork enclosing small spaces corresponding only with that of the original cells, but filled simply with granular material. No large blood-vessels seen in the tumor, Scattered traces of brown pigment existed in many places, chiefly within the stroma. A few groups of leucocytes, with fragmented and biscuit-shaped nuclei, were found here and there, both in

the stroma and alveoli. Sections through the kidney, taken at its junction with the tumor, shows a narrow fibrous band between the renal tissue and that of the growth. In the hemorrhagic infarcts the nuclei stain faintly and the arterioles contain hyaline thrombi. The tufts are shrunken throughout, and the fibrous tissue between the tubules is more abundant and dense than normal.

FIG. 3.

Section from the tumor showing the alveolar structure. The clear cell protoplasm and sharply defined cell wall are also seen. Zeiss Obj. D, Oc. 3, semi-diagrammatic. Drawn by Mr. R. H. Phillimore, medical student. The character of the drawing has been much altered in making the zinc etching.

From the situation and general appearance of the growth I was at first inclined to regard it as a tumor originating in aberrant supra renal tissue within the kidney, a condition first described by Gravitz (*Virchow's Archiv*, Bd. 93) under the name of *Strumæ Lipomatodes Aberratæ Renis*. On comparing the sections, however, with specimens of supra-renal tumors in my possession, it shows no resemblance to them, and must be classed as an "alveolar" adenoma of the kidney. As the total number of accurately recorded cases of this nature is still small, a detailed description seemed advisable.

While this paper was in preparation a report of a case of multiple adenomata of one kidney successfully removed by operation has been published by Dr. Keyes of New York (*Am. Jour. Med. Sc.*, Dec. 1890). As this paper includes a pathological report on the specimen by Dr. H. Biggs of the Carnegie

Laboratory, containing a good deal of general information on the subject of renal adenoma, together with a full bibliography, it seems unnecessary to go into the general bearings here further than is necessary to make clear my views as to the nature of the present case.

Adenomata of the kidney are classified by Weichselbaum and Greenish into papillary and alveolar or tubular, though no special difference appears to exist between the two forms. It is stated that the papillary form occurs in connection with the collecting tubules, and the alveolar, in the convoluted tubes. This statement does not seem to be well established, but as the present case was obviously not connected with the medulla of the kidney, the present case has no bearing upon the matter.

One form of renal adenoma, does occur in which the condition is essentially an overgrowth of the convoluted tubes. These are seen as small, compact, diffuse epithelial nodules lying in the cortex, and the epithelium composing them resembles closely that normally found in the convoluted tubes. Now in the present case the epithelium comprising the tumor does not resemble any normally found in the kidney, and on comparing sections of our tumor with specimens of these adenomata of the convoluted tubules just referred to, the dissimilarity is strikingly brought out. It is difficult to see why the cells of an adenoma originating in epithelial tissue normally present in the kidney should differ materially from it in appearance. This difference is not in accordance with what we know of adenomata in other parts of the body. In the liver, for example, where adenomata are very common, the cells comprising them are always readily recognizable as liver cells. Again, in struma of the supra-renals, whether simple or malignant, and whether arising in the adrenals themselves or in the aberrant portions of supra-renal tissue mentioned above, the cells of the tumor always preserve the characters distinctive of the cells which normally form the supra renal cortex. I have a specimen of this form of tumor where secondary growths in the lungs and liver preserved in every instance the close resemblance to supra-renal cortex.

From this it would seem that there are no grounds for assum-

ing that adenomata growing in the kidney are developed from the cells of the metanephros unless the epithelium resembles that normal to the kidney.

W. H. Councilman (article "Adenoma," *Wood's Reference Handbook*), in describing the various forms of adenoma of the kidney, lays stress on the fact that, even when the epithelium resembles that of the kidney (*e.g.*, in cylindrical adenomata), no trace of glomeruli are ever found. He also emphasizes the fact that in the forms most nearly allied to renal tissue, viz., adenomata of the convoluted tubules, the arrangement is not such as to suggest functional activity. This latter point, however, does not seem to be well taken, as these growths do not depart more from the renal type into the arrangement of their epithelium than do the hepatic adenomata.

Orth (*Lehrbuch der Sp. Path. Anat.*, Band II, p. 109), in a critical survey of the facts concerning hypertrophy and regeneration of the kidneys, while admitting that, to a certain extent, the secreting epithelium possesses powers of repair and hyperplasia, considers that there is no evidence that entire tubules are ever evolved out of existing kidney structures after birth, if at all, and regards enlargement of the kidney following extirpation of the opposite organ as simple and not numerical hypertrophies.

Some light may be thrown on the question by comparing the adenoid tumors occurring in the kidney with those of the liver. Both organs agree in presenting a form of adenoma characterized merely by a disorderly growth of epithelial cells readily derivable from the ordinary hepatic and renal cells. Here the resemblance ceases. The liver presents no other form of primary epithelial tumor except the rarely occurring condition of primary carcinoma of the bile ducts. The kidney, on the other hand, though, on the whole, relatively seldom the seat of tumor formation, presents an extraordinary variety of widely different epithelial growths, none of which show very close relationship to any of the structures normal to the organ. These facts seem easy to interpret on embryological grounds. The liver is a glandular organ, preformed at a very early stage as such, and in which every portion represented in early fœtal life persists to

form permanent functionating tissue. The kidney, on the other hand, arises in a way not yet fully understood from some portions only of a large number of embryonic structures, the subsequent fate of the parts not employed to form permanent tissues being to a large extent unknown.

Of course the great variety in structure characterising renal adenomata may be connected with the fact that in the normal kidney we find constant differences in the character of the epithelium in the convoluted tubules, looped tubules, and collecting tubules, but, except in adenomata of the convoluted tubules, no relation has been demonstrated between the site of the growth and the nature of the epithelium. It would not, perhaps, be going too far to say that the epithelioma of the convoluted tubules is the only one clearly shown to be undoubtedly of renal origin.

While Cohnheim's hypothesis of the origin of tumors has been unduly strained to account for the origin of tumors in regions where no undeveloped rudiments were known to exist, this contrast between the behaviour of the liver and kidney in the matter of primary tumors bears it out most strikingly on theoretical grounds. We have two organs having one homologous form of adenoma. In the organ (liver) in which all the parts represented in the embryo become permanent tissue, no other forms of adenoma occur. In the other (kidney), where several structures are arrested at various stages of their development, other adenomata are not only found, but are also very dissimilar in structure.

The presence of these rudiments in the kidney and their absence in the liver, seems to be the most reasonable explanation of the very different attitude of these two organs with regard to the occurrence of epithelial growths, since adenomata of the convoluted tubules and the ordinary adenomata of the liver present such striking analogies.

When we find a tumor occurring in the kidney and yet differing essentially from it in the nature of its cells, we may account for it in one of two ways. First, we may conclude either that it was derived from the metanephros, and that the estranged appearance of the epithelium is due to subsequent metaplastic

changes in the cells themselves: a state of affairs not yet clearly shown to occur in any tissues of the body. Second, we may suppose that it never formed a part of the metanephros, but was included in it mechanically, by heteroplasia. There is abundant evidence that this frequently occurs in the body, and we have other instances of it in the kidney itself.

In connection with the development of the kidney, we have certain fœtal structures, such as the pro-nephros, and portions of the Wolffian ducts and Wolffian body, which undergo atrophy at an early period of fœtal life, and it appears reasonable to suppose that parts of these may persist, become enclosed in the kidney, and subsequently form tumors in it. Theoretically, the kidney should be the organ, of all others, able to furnish instances of the teratoid origin of tumors from persistent embryonic rudiments, yet, with the exception of striped muscle tumors, few renal growths have been regarded from this point of view, the tendency being rather to consider renal growths as necessarily originating in true renal tissue.

Bland Sutton (*Lancet*, 1887) has suggested the possibility of the so-called congenital cystic kidneys being in reality due to persistent remnants of obsolete portions of the Wolffian duct.

Although Cohnheim's hypothesis of the origin of tumors from the persistence of superfluous portions of embryonic tissue has not fulfilled its originator's expectations by explaining the genesis of all forms of tumor as was at first attempted, still the teratoid nature of dermoid cysts, sacral hygromata, cysts about the neck or floor of the mouth, and their connection with obliterated fœtal canals has been repeatedly demonstrated by Bland Sutton and others. Virchow showed (Ueber die Bildung von Knochencysten, *Berliner Akad. der Wissenschaft.* 1876) that cysts occurring in the shafts of long bones and in the jaw could be traced back to islets of cartilage which had become separated from the epiphysis, and which he was able to demonstrate in normal bones.

Of course the complete proof of the congenital nature of these forms of renal adenomata, whose cells differ from renal epithelium, can only be furnished when the structures which give rise to them have been detected in the kidneys and their source

recognized. This can only be done by the careful examination of a large number of embryos in comparatively early stages of development. On the other hand, in view of the small number of observations in this direction, and the fragmentary state of our knowledge of the development of the kidney, the absence of such evidence does not negative this view. On the contrary, we have seen, on the one hand, that it is in accordance with the tendency of adenomata in other regions to remain true to the cellular type of their parent tissue, while, on the other hand, the proof of the teratoid nature of other anomalous growths has been found forthcoming when carefully sought for.

For the present, I would suggest, as a working hypothesis, that the only true renal adenomata are those of the convoluted tubules, and (perhaps) the papillary form found in the pyramids.

While this view as to the heterologous nature of renal adenoma has been suggested by the fact that the histological features of the tumor in this case differ so widely from those which might be expected in any growth developed in normal kidney, I am not able, from examination of the specimen, to throw any light as to the tissue from which it is derived. The peculiarities of the specimen consist in the non-renal appearance of the epithelial cells and their intimate relation with the finer filaments of the stroma. The tumor, however, shows in places such marked degenerative changes, that one cannot help wondering whether, even in the best preserved portions, the peculiar structure of the cells may not be due to a process of involution.

The relatively large, polygonal cell-bodies, composed of clear, translucent, fat-containing protoplasm, with distinct, sharp cell-wall and small, round, centrally-placed nuclei, have certainly more resemblance to the epithelium found in sebaceous glands than to that of any other region.* Two undoubted cases of sebaceous cyst of the kidney have been recorded. One by Paget (*Surgical Pathology*), the other by Madelung (*Centralblatt für Chir.*, 1888). A third (doubtful) case has been observed by

* This similarity in the section of tumor hardened in alcohol seems to be due to the extraction of the fat which lay in the cells in the fresh condition, leaving the cell body shrunken and making the cell wall unusually distinct. The cells, too, in any case, are larger than any sebaceous cells I have seen.—[J.]

Schlegenthal (*Langenbeck's Archiv*, Bd. xxxvi). In all these cases other typical epidermal structures were detected, and, as in the present case none were found, and no cases of pure adenoma of the sebaceous glands, unaccompanied by epidermis, are recorded, I think that the resemblance is only apparent and due to a degenerative process in the cell-body, the result of slow growth and defective nutrition.

As to the possibility of the tumor belonging, after all, to the class of aberrant supra-renal strumæ it is not easy to express a positive opinion. The cells of these tumors often contain fat-drops, and fat-containing cells are normally found in the supra-renal cortex. The arrangement of the supra-renal tumors as to epithelium, as far as shown by the specimens I have examined, is dendritic and in columns, rather than tubular and in alveoli. The columnar and not the tubular arrangement is one characteristic of normal supra-renal cortical tissue, and supposing we are correct in assuming that the arrangement of the tumor remains true to its physiological prototype, tubular adenomata would not be derived from supra-renal tissue. The occurrence of aberrant struma in the kidney does not exclude, but rather renders probable, the occurrence of other heterologous growths. Formerly, when renal tumors were not removed by operation, more carcinomata and fewer adenomata were reported. In the present case it cannot positively be stated that this tumor might not have become cancerous, though the absence of metastasis and infiltration of the adjoining kidney substance as well as the microscopic appearance of the tumor itself seems to negative it. All that can be stated of the tumor here described is that it had existed for a long time in the kidney, possibly from an early period of fœtal life. Subsequent degenerative changes occurring in it, an incidental contamination by putrefactive bacteria (entering by the blood-vessels ?) caused the recent changes, giving the case the clinical changes it presented.

A CASE OF OBSTRUCTED INCOMPLETE INGUINAL HERNIA—HERNIOTOMY—DEATH.

By Stanley S. Cornell, M.D., Athens, Ont.

Patient, S. S , a farmer, aged 71 years.

Past History.—Twelve years ago, while suspended by his belly across the upper ends of the staves of a high sap-tub, and engaged in drawing sap from its bottom with a pail, the patient experienced the sensation of "something having given way" within his abdomen. This occurrence was subsequently attended with little inconvenience save the presence of an enlargement in the right groin. The "enlargement" was of the size of a hen's egg, soft and elastic ; and in this condition it remained until the 28th November, 1890.

Present History.—Upon the 28th Nov., during the exercise of moving hay into a high loft, there occurred to the patient the consciousness that his "old weakness" had become exaggerated. Examination disclosed the enlargement in the groin increased to twice its original size ; and with its altered condition symptoms of intestinal obstruction developed. Pain in the right groin, radiating to the umbilicus and stomach ; distension of the intestines ; vomiting of matters biliary ; constipation, and hiccough were the symptoms manifested. When these symptoms had been in progress two days, I was called in attendance.

I found the patient much depressed by the severity of pain, by the frequency of hiccough, and by the persistence of vomiting. The matters ejected from the stomach consisted of partially digested food mingled with bile and a peculiar muddy matter made up of fine brownish particles. From the vomit was emitted an odor sour and fæcal. The tongue was coated with a grayish-brown fur, existing in the form of patches irregularly scattered over its dorsum. The pulse was weak and compressible, and constipation was still present. Examination of the groin revealed the following : A tumor the size of a large goose-egg, slightly elastic and greatly distended, situated a half-inch above Poupart's ligament, midway between the anterior superior spine of the ilium and the pubic symphysis, and giving a flat percussion-

note. The movements of the tumor—or, properly, hernial mass —under manipulation were very limited, and the act of coughing transmitted no impulse to it. The overlying skin was not altered in color from the normal.

The gravity of the situation was fully explained to the patient, and the necessity of the operation of taxis or herniotomy discussed ; but this appeal was met by a request that mild measures be first employed. Accordingly, retirement to bed in a warm apartment, the local application of hot stupes, the internal administration of iced milk and morphia, were prescribed, and purgatives interdicted. Unfortunately, these measures were neglected, and the patient heroically walked about the house and upon an adjacent lake-shore.

By the following morning these symptoms were not ameliorated, pain, vomiting and hiccough having continued without intermission. Further advice as to the propriety of operating being unheeded for another twenty-four hours, and the symptoms taking on more urgent characters, I asked that a consultant be called. The latter arrived twelve hours later, and confirmed my opinion that reduction must be immediately effected by either taxis or herniotomy.

The Operation.—The required instruments for operation were immersed in 1 to 30 carbolic solution, the abdominal, pubic and scrotal hairs were removed with the razor, and the denuded parts thoroughly scrubbed with a 1–1,000 perchloride of mercury solution. The patient was now deeply anæsthetized, and an attempt at reduction by taxis made. This failing to effect any diminution in the size of the hernial tumor, the operation of herniotomy was begun. An incision was conducted through the skin to the underlying fascia from the base of the outer aspect of the hernial mass to a point one-half inch external to the spine of the right pubis. Beneath the first layer of fascia another layer containing fat was encountered and divided upon the director ; then a small number of muscular fibres was incised, and the sac of the hernia came to view. Although I made this dissection with care, I regretted not being able to demonstrate the elegant arrangement of hernial coverings so well described

in text-books of anatomy and surgery; but it is probable that the long time involved in the incarceration of this hernia induced induration and adhesion of tissues.

The Sac: its condition and treatment.—The sac was pear-shaped, rounded inferiorly, and elongated at its superior portion; thick and elastic, and of a bright-red color. Over its surface existed a number of small distended veins. The reaction of color upon pressure of the finger was prompt. The nature of its contents could not be definitely known from physical examination, but it is probable that omentum and intestine—the former in larger proportion—were present.

At this stage of the operation, the respirations ceased, the pulse was imperceptible at the wrists, the eyes were fixed, and the face and arms deeply cyanosed. As this condition of depression was thought to depend more upon the lowered vitality of the patient than the quantity of ether inhaled, and as it was evident that a prolonged operation would be met by death upon the table, exploratory incision of the sac was neglected. The finger, carried upward upon the neck of the sac, encountered an impervious constriction, whose division was effected by the introduction of a blunt-pointed bistoury upon the flat, the insertion of its point within the internal abdominal ring, and the approximation of its cutting-edge to the inner and central portions of the internal pillar. Two slight nicks made in an upward direction enabled the finger to sweep the circle of the ring and break a few remaining adhesions. Taxis being still ineffective, resort to downward traction of the sac was had, and a narrow band of firm fibrous tissue was discovered encircling its neck. This was divided, and at once the contents of the sac noiselessly escaped into the abdominal cavity. After this the sac was easily reduced. It is important that I should here remark that the sac was introduced WITHIN the ABDOMINAL CAVITY by means of a CLEAN finger. A drainage-tube was inserted deeply in the wound-cavity; deep sutures of ASEPTIC silk were employed to bring the divided fascial layers together; and coarser silk to approximate the edges of the skin-wound. Over all, iodoform gauze, absorbent cotton, and a sublimated gauze spica were applied.

Post-Operation Period.—Extreme depression followed the operation, the pulse being feeble and the skin of the whole body cold. The cardiac tone became so much reduced, and the symptoms presented such evidence of vital failure, that hypodermic injections of whiskey were given, and bottles of hot-water applied to every accessible portion of the body. Soon signs of returning power manifested themselves by increased tension of the pulse and a greater degree of warmth of the body. But this improvement of reaction was at once combated by delirium, in which the patient would arise violently, throw himself from side to side, and talk at random. In addition, hiccough redeveloped and became a high-pitched, prolonged, squealing inspiratory sound, in which breathing and articulation were seriously interfered with. Vomiting of matters of an indeterminate character also occurred at intervals. The hypodermic administration of a quarter-grain of morphia was followed by a temporary subsidence of delirium, hiccough and vomiting; but their recurrence rendered it necessary to repeat the injection after the lapse of two hours. The second administration procured a fitful sleep during the night.

FIRST DAY AFTER OPERATION.

Morning.—The pulse is small, weak and rapid, and the extremities are cold. Pain is not present, but in its stead is experienced a sense of soreness at the seat of incision. The stomach is free from nausea. Although a clear idea of current events is shown by rational discussion, there is manifested a peculiar anxiety with reference to anything that pertains to the possible results of the operation. Occasionally a question irrelevant to anything in relation to himself and not bearing upon any answerable subject betrays the patient's delirium. Cough is present. The abdomen is not distended to a greater degree than before operation; and constipation is still present. The urine was voided voluntarily during the night.

Treatment.—Iced milk, with a large proportion of cream, in tablespoonful quantities by the mouth every three hours will be administered, and pellets of ice be given as often as the patient

desires. The room is to be kept at a temperature of 80°F., and sufficient clothing applied to the patient to impart general warmth.

Evening, 7 *p.m.*—The pulse shows diminished tension and volume and increased rapidity. The extremities and face are cold. The patient visibly attempts to evade a conviction of ill-feeling by an anxious inquiry into matters extraneous to himself. The skin of the extremities is relaxed, and the face has taken on a sunken appearance associated with a dusky hue. Hiccough, absent during the day, has returned, and with it vomiting of milk and a dark, fæculent matter. The patient is free from pain, the intestines are still distended, the abdominal muscles are not rigid in any region, and voluntary urination has occurred twice since morning. Constipation is still present. 9 *p.m.*—The hiccough has assumed such increased severity, and so threatens the complete performance of respiration, that morphia ($\frac{1}{4}$-gr. will be given hypodermically. Rest now follows the injection of morphia, and there are evidences that its full physiological effects will be manifest. The pulmonary physical signs indicate the presence of large and small moist râles in all regions anteriorly and laterally.

SECOND DAY AFTER OPERATION—DEATH.

Morning.—The patient lies in a narcosed state. The pupils are minutely contractod, and the respiratory acts are stertorous and carried on at long intervals. The pulse is small, weak and intermittent, and the extremities are cold, relaxed and bluish. Attempts to arouse the patient are met by momentary answers intelligently given ; but the condition of stupor again manifests itself, and urging with the fingers and by the voice elicits no response.

Treatment.—$\frac{1}{50}$ gr. pills of nitro-glycerine every two hours ; hot broth, strongly seasoned with pepper ; and hypodermics of whiskey frequently repeated.

Afternoon.—The condition is not altered. 3.10—The patient, in response to a loud interrogation, has just told me he recognizes my identity by pronouncing my name. 3.15—Death has occurred, the respirations being easy and noiseless.

Cause of death.—Heart-failure dependent upon prolonged obstruction and gangrene (?) of incarcerated intestine; and upon pulmonary œdema.

Post-mortem appearance of the wound.—The edges of the inner two-thirds of the wound are firmly approximated by the presence of a hard, lymph-like substance glistening in appearance; and in the drainage-tube is detected a small quantity of reddish serum.

CHOREA: ITS RELATION TO RHEUMATISM AND TREATMENT.

By George A. Brown, M.D., Montreal.

Having had a few cases of chorea in practice, which impressed upon me the fact that there was some peculiar connection between chorea and rheumatism, has induced me to write a few words on this subject.

It is not a new idea that chorea is related to rheumatism, for as early as 1850 Dr. Kirkes (in an article in the *London Medical Gazette*) speaks of the relation, and says "that future experience will still more positively demonstrate that an affection of the left heart, with the presence of granular degeneration, is almost an invariable attendant upon chorea, under whatever circumstances it may be developed."

Lately this subject has again been brought to the notice of the medical profession, and during the last few years several very interesting articles have been written on chorea as a rheumatic manifestation.

There are still some very eminent men who do not agree with recent writers, and amongst them is Dr. Hammond of New York, who says "that while it is certainly the case that chorea exists coincidently with rheumatism, its influence is nothing more than a depressant." He considers the disease to be a neurosis.

Dr. Gowers says "that it is impossible to regard chorea as a result of rheumatism, since each disease occurs frequently without the other, and no relation has been traced between chorea and the common cause of rheumatism, exposure to cold."

I will now give the main facts in favor of chorea being a rheumatic manifestation.

It is a well-known fact that rheumatism may develop before, during, or after an attack of chorea. Having had a case in practice lately which bears very much on this point, I will give a brief sketch of her history.

S. A., girl, aged 12, came to me, Aug. 24, 1890, complaining of choreic movements of the left side of the face, arm and leg, which began about eleven months ago. The movements were so severe at first that she could not speak plain, and deglutition was very difficult. On making a physical examination of the chest I found a mitral systolic murmur, with hypertrophy of the left ventricle. Her past history was good ; never had rheumatism. *Family history*—Mother and father both had rheumatic fever.

Ten days after seeing patient (Sept. 3, 1890) parents noticed that the choreic movements were beginning in the right hand, and at the same time she was complaining of pain in the right metatarso-phalangeal joint. The next day there was general chorea and the pain increased in severity.

Four days after the pain commenced I saw the patient, and found her suffering from severe general chorea and pain in the great toe. On examination, I found the right metatarso phalangeal joint of great toe swollen, hot, red, and very tender ; temperature 101° ; pulse 108. Mitral murmur was much louder. Under the influence of salicylate of soda and rest in bed the rheumatic manifestation soon disappeared, and at the same time there was a marked improvement in the choreic movements. The salicylate was stopped and the patient put on Fowler's solution.

On Sept. 18th, 1890, I found that the choreic movements had left the left side of the body and were confined entirely to the right side. On Sept. 24th I was sent for again. Mother told me that the movements had disappeared for a few days ; but that she had taken her out on a cold day, and on returning she complained a great deal of cold. During the night she was very feverish ; choreic movements returned on both sides, and with

them an erythema of both arms and legs. Temperature 101° at time of visit. Under the influence of salicylate of soda the fever and rash disappeared, and the chorea improved so much that I decided to continue the salicylate and the arsenic together. After one week, movements left the right side of the body, and in two weeks time had ceased in the left side.

From the above case I think there is evidence to prove that the chorea and endocarditis were caused by the rheumatic poison which we know was present, as the patient developed an attack of rheumatism during the chorea. When the rheumatic attack occurred, it aggravated the disease, causing the chorea to become general. Therefore, I think one is justified in saying that the chorea of the right side was due to the rheumatic poison, as they both occurred simultaneously ; and if one admits that the right-sided chorea was due to the rheumatic poison, then why not the chorea of the left side and the endocarditis due to the same cause ?

I will give a short synopsis of one or two cases reported by Dr. Cheadle, where rheumatism occurs before or after chorea, and which show the intimate connection between the two diseases.

A. T., girl, aged 10, with rheumatic history, admitted to hospital June 26th, 1889, with chorea and morbis cordis. She had had three attacks of rheumatic fever, the last attack occurring six months before entrance to hospital. During the last attack morbis cordis developed. Chorea commenced a fortnight before admission. Nineteen days after admission severe pericarditis set in with joint symptoms. This case shows that the rheumatic poison must have been very active before and during the chorea.

A. W., girl, aged 16, admitted to hospital with stiffness, swelling and tenderness of the wrists, knees and ankles. Never had any joint affection before. Four years ago had chorea. Examination showed signs of mitral disease and increased præcordial dulness, showing that the disease was of old standing and caused by the chorea. Mother and sister had rheumatic fever.

W. T. D., boy, aged 8. A year ago had an attack of chorea brought on by fright, and followed six months later by arthritis. Six months later another attack of chorea and tonsillitis. Exami-

nation of heart; loud mitral systolic murmur. It appears as if the chorea and rheumatism were interchangeable in this case.

The statistics of the Collective Investigation Committee show that of 439 cases, 116 or 26 per cent. had acute or subacute rheumatism before chorea, also 63 had rheumatic pains, making a total of 179 or 40 per cent. They do not give the number of cases which occurred during or after chorea, which would increase the per centage.

In nearly every fatal case of chorea there are vegetations on the mitral valve identical with those of acute rheumatism. In all the above cases there was a mitral lesion, and in two of the cases it had developed before any rheumatic manifestation had appeared. Sturges reports 80 fatal cases, with only five where the valves were healthy. Dr. Fagge reports 18 fatal cases, with only one case where the vegetations were absent. This seems to me to be an important fact, as how could a neurosis, pure and simple, cause this pathological condition.

As to the causation of the endocarditis there are two different opinions,—one, that the chorea itself causes the endocarditis; the other, that it is caused by the rheumatic poison. I think the latter view is the correct one; for in the case reported by myself it was evident that the chorea was caused by the rheumatic poison, knowing that in the majority of cases endocarditis is caused by rheumatism. I think it is fair to assume that the endocarditis in that case was due to the same cause.

Dr. Gowers says "that organic disease of the heart is present in three-fourths of the cases with family history of rheumatism, and that it is only present in one-third without a family history," showing that the rheumatic diathesis must have some connection with organic disease of the heart.

The next point of interest is that in the majority of cases there is a family history of rheumatism, or some rheumatic manifestation has occurred at some time in the patient's life. The report of the Collective Investigation Committee shows that of 439 cases, 199 or 45 per cent. had a distinct rheumatic history, and if one adds the rheumatic or ague pains, it increases the per cent. to 57. Dr. Barlow found rheumatism to be present in

57 per cent., exclusive of family history. Dr. Cheadle, who says that he took particular care inquiring into this point, found it to be 73 per cent. I have had three cases since I left the General Hospital, and during my residence there I had charge of two, and in each case there was a rheumatic history. Although there is not a rheumatic history in every case, yet it is a striking fact that it is present in almost three-quarters of the cases. Every one knows how difficult it is to obtain a family history from some patients, who do not remember much about their relations, and still these cases are put down as having no family history, when there might be one unknown to the patient.

The statistics of the Collective Investigation Committee prove that chorea is more frequent in girls than boys, which agrees with the view of chorea being a rheumatic manifestation, as the statistics of acute rheumatism (Goodhart) show that it occurs more frequently in girls than boys under twenty.

Dr. Sée said "that chorea had a tendency to become localized to one side in one-third of his cases"; besides being localized, it may cease in one side and affect the other. This latter manifestation was very marked in the case reported by myself, and, I think, can be explained by the erratic nature of the rheumatic poison, which seems to have the power of affecting individual structures.

Different authorities hold that chorea is caused by fright. This fact has been recorded and several well-marked cases reported; but if one goes a step farther, and examines the evidence, there is often a rheumatic history. And on examining the heart during life, a mitral systolic murmur is often found; if not, when death supervenes a mitral lesion is found at the autopsy. In the first part of this paper I gave a case report where the chorea was caused by fright, and during the attack a mitral lesion developed. The patient recovers from an attack, but six months later has an attack of rheumatism, and six months later has a second attack af chorea without any exciting cause. Dr. Wilks reports a case of a boy who had chorea immediately after being terrified by a gunpowder explosion, resulting in death, and at the autopsy an inflamed mitral valve was found. There

are very few cases where chorea has occurred immediately after fright, while the majority of cases take from one to two weeks. That fright can affect the nervous system is well illustrated by the complete arrest of digestion after a mental shock. If fright can affect one part of the nervous system, then why not affect the vasomotor system, thereby interfering with metabolism, and, with a rheumatic predisposition, cause an excess of lactic acid, which acts on the nervous system on account of its lowered vitality or instability, which is common in childhood. This would explain the interval between the fright and the chorea. The fright may be the exciting and the rheumatic poison the predisposing cause.

Finally, I think that in the majority of cases chorea is a rheumatic manifestation; but admit that there are other causes, as organic disease of the brain. This is shown by the autopsies of Guy's Hospital, where 14 fatal cases were due to intercranial tumor. My own opinion is that it is always a manifestation of some other disease, as rheumatism or organic disease of the brain. From the following conclusions it is evident that in the majority of cases it is a rheumatic manifestation:

(1) That rheumatism may precede, concur or follow an attack of chorea, which is the only disease which does so.

(2) That they have a common lesion, namely, endocarditis, and sometimes pericarditis.

(3) That in the majority of cases there is a rheumatic history.

(4) That it is more frequent in girls than boys, which is also true of rheumatism.

(5) That it seems to have the power of shifting from one side to the other, which is characteristic of the rheumatic poison.

(6) That there is generally an emotional excitability in both diseases.

Treatment.

The treatment of chorea is often very unsatisfactory, as certain cases will persist no matter what is done for them. The first great point in the treatment of chorea is rest for the nervous system. It is a well known fact that when choreic patients enter a hospital and are compelled to remain in bed, and have no

excitement, they get well quickly. I think that a great many of the severe choreic cases are due to this fact, as the patient is generally subject to exciting causes during the day.

If patients were put to bed it might worry them so that you would only defeat your object. I think there is one way of getting over this difficulty, by making the patients sleep during the afternoons. Give them some hypnotic at first and after a time they will sleep of their own accord. The medicinal treatment has improved of late years. Sulphate of zinc has held its place for a long time, but has lately given way to arsenic, which is held by some writers to be a specific; but this is not true, as in a great many cases it fails.

The favorite preparation is Fowler's solution. It is given in small doses at first, from three to five minims, and then increased up to fifteen, or until the drug produces its toxic symptoms. Arsenic has been used very successfully hypodermically in choreic cases. Dr. Hammond says "that when you produce toxic symptoms by the stomach, to continue it hypodermically in increasing doses. In this way the toxic symptoms subside." He has given as high as thirty minims at the commencement, and increased it to fifty. He also says that it is liable to produce abscess if the following precautions are not observed. First remove the lavander and reduce the Fowler's solution to one-half, using glycerine as your dilueut, as it is the least irritating. Also introduce the syringe where the skin is moveable, as in the forearm. Iron has generally been given to improve the blood. Salicylates have, as a rule, failed.

Having advocated chorea as a rheumatic manifestation, it appears that anti-rheumatic treatment is not much good. During the treatment of my last case I was surprised with the rapidity with which the case was cured by a combination of salicylate of soda and arsenic. The case had lasted for eleven months, and there was no improvement, although arsenic had been faithfully tried by two medical men. When the rheumatic attack occurred, and she was saturated by salicylate of soda, and when the salicylate was stopped and she was placed on arsenic in increasing doses, she recovered in four weeks time. When the choreic

movements returned again, and she was placed on the two together, she recovered in two weeks. The salicylate was at first pushed and then continued three times a day, at the same time the arsenic was given in increasing doses. As there are no statistics on this combination, I am not prepared to say that it will reach the same in every case ; but if there is a case with a distinct rheumatic history, I think one ought to get the same results, as no doubt the salicylate controls the rheumatic poison while the arsenic acts as an alterative to the nervous system.

RADICAL CURE FOR FEMORAL HERNIA.*

By Kenneth Cameron, M.D.

On June 20th, 1890, Mrs. H., aged 41, consulted me for a small, painful swelling in the left groin, which proved to be a partly reducible femoral hernia.

Past History.—Her general health had been excellent. She was a very stout, but very active woman ; married three times, and pregnant twelve times, of which two sons only are living. About four years ago her house caught fire, and in her hurry to remove her furniture, while going down stairs, she took a false step and strained herself, at the same time felt something give in left groin and discovered a small lump about the size of an almond, which was easily reduced. A few days after this she had an abortion at the third month, and from that time she began to fail in health and to lose flesh rapidly. About a year and a half ago, after the death of her youngest child, she began to have attacks of loss of consciousness, which at first only occurred occasionally, but gradually increased in frequency until now there is not a day during which she has not two or three. At first they come on often without apparent cause, but more frequently with any emotion or sudden sound, while now the slightest sudden noise, such as rapping at the door or even speaking to her suddenly, may precipitate an attack, while one always occurred if there was much difficulty in reducing hernia. Appetite became very capricious ; she would refuse nourishing

* Read before the Medico-Chirurgical Society of Montreal.

food and crave for indigestible articles of diet, and has recently been indulging in considerable amount of stimulants in the form of beer, which I stopped, without any apparent benefit. Shortly after these fits began she could not tolerate the truss she had been wearing, the result being that the hernia remained down nearly all the time and rapidly increased in size, rendering her unfit to carry on her work. On one or two occasions there was a good deal of difficulty in reducing it, but never so great as to render medical aid necessary.

Family History.—There is no neurotic tendency, but a marked tubercular taint.

Present Condition.—The patient was found to be well developed, but very poorly nourished; muscles very soft and flabby; complexion sallow and anæmic; hyperæsthesia over the lower part of the abdomen, and especially in the left groin, where a lump about the size of a walnut could be seen, which she said was excessively painful and would hardly permit it to be touched, but when her attention was engaged in answering questions the tumor could be handled freely, though she remarked that it was painful; with coughing or straining it would become as large as an orange, and this could be reduced without difficulty. Heart sounds were weak, but otherwise normal; pulse weak and compressible; lungs showed no sign of disease. There were no symptoms indicative of uterine derangements, and she thought that she was two months pregnant. Urine diminished in quantity but healthy. Appetite entirely gone, the stomach being very irritable, so that she can retain only a little hot tea. Bowels moved only by purgatives or enemata. Mind and memory seem perfectly clear; patellar reflexes active.

She attributed all her symptoms to the hernia and begged that some operative measures might be resorted to for her relief. Symptomatic treatment was then begun. Oxalate of cerium and bismuth checked the vomiting so that she could retain a little milk and bovinine, followed by quinine, with iron when the stomach would tolerate it.

During this time I had several opportunities of seeing her in the fits. Having been brought on by some slight cause, she

would drop down quietly wherever she happened to be ; she would be carried to her bed or couch, where I usually saw her. She would be lying perfectly still, with legs straight and toes extended, hands clenched ; no spasms or convulsive movements were ever detected ; face much paler than usual ; eyes drawn up, corneal reflex sometimes, though not always, absent, pupils dilated and equal ; breathing hurried ; pulse very weak, almost imperceptible at the wrist. A loud sound might cause her to open her eyes, but she would close them again and remain in same condition ; she would remain so from a few minutes to hours. The fit usually terminated by her suddenly opening her eyes and staring about in a dazed manner, when she would either recover completely or relapse into another fit. She was, as a rule, very quiet except during a thunderstorm, when she always had an attack, and would become very violent, several persons often being required to hold her.

After a month's treatment with but little improvement, an operation was decided on and carried out on July 22nd with the assistance of Drs. Allan, Springle and A. W. Gardner. The sac was exposed and opened, when a small piece of omentum was found to be adherent ; this was cut off and the rest reduced. In order to tie the neck of the sac as high as possible, ligatures of silkworm gut were passed from above Poupart's ligament round the neck and back, and tied. The sac was then pushed up as far as possible into the ring and held there by deep sutures. The wound was closed and dressed with iodoform and sublimated gauze. There was a good deal of pain for the first three days, but this ceased after a free purge by sulph. of magnesia. From that time she steadily improved. The wound united well except at a stitch-hole and drainage-tube wound. Later on the deep sutures broke down and were removed by a small incision, and ten days after the wound was completely healed. Having been kept in bed for six weeks, she was allowed up, with a well-fitting spica bandage for support. From the time of the operation there had not been any of the fits ; on one occasion, during a thunderstorm, she got very excited, but showed none of her former symptoms. Her appetite returned, her bowels became regular,

she began to put on flesh rapidly, and claimed that she had not felt so well for several years.

On Sept. 27th she took a drive in a street car to the other end of the town, and that night she had an abortion. Dr. Springle attended her, as I was out of town, and from which she recovered in ten days. From that time she has been going about her housework wearing a soft water-pad for support. With the exception of two illnesses, she has been enjoying fairly good health, and at the present time the wound is firmly united, there is no indication of return, and not the slightest impulse conveyed to the hand on coughing.

Such is the case from the physical point of view, but there is a moral aspect which it would be well to consider.

The patient is a Jewess by birth, but her present husband is a Christian. For this reason she was shunned not only by the rabbi and her people, but even by her own son by a former Jewish husband. When she let it be known that an operation was going to be performed, her son at once went to see her, and was soon followed by the rabbi and her former friends. But this did not alter her condition in the slightest. During her stay in bed they were very attentive to her and have now become thoroughly reconciled.

Although I consider that the operation was the most important factor in the relief of the symptoms, I cannot help but think that the reconciliation with her co-religionists had an important bearing on the case.

REPORT ON THE TREATMENT OF PULMONARY TUBERCULOSIS BY KOCH'S METHOD,

In Dr. MacDonnell's Wards of the Montreal General Hospital.

By Dr. W. D. Smith, *House Physician.*

When this plan of treatment was first practised in the Montreal General Hospital (December 19th, 1890) surgical patients were selected, because in them the manifestations of the disease and the effects of the fluid upon it were more readily observed. The following cases of pulmonary tuberculosis, without external disease, were subjected to treatment, beginning Jan. 12th, 1891.

Case I.—The patient, M. M., aged 18, was employed in the G. T. R. shops up to August last, but for the past fifteen months he has been in bad health, having suffered at first from cough, expectoration, debility, loss of weight, with shortness of breath on exertion, and occasional night sweats, symptoms from which up to the present date he has never been entirely free. No history of previous illness except measles when a child. The family history is negative, the father having lost his life by accident while young; the mother is alive and healthy; a sister died in infancy. No relative died of phthisis.

The patient was first admitted on the 22nd of October, 1890, and remained six weeks in the institution. Previously to admission he had been losing flesh rapidly and the cough was very frequent and racking. It was noted on admission that he was pale and ill-nourished; weight 108 lbs. The physical signs then present indicated consolidation of the right apex and commencing disease in the left. No evidences of disease were noted elsewhere. During his residence in hospital the temperature register was carefully kept. The range was low throughout. The morning temperature was 97° to 98°, generally being just above 97 . For one week it was a little higher than usual, being 98.4° to 98.8 for six mornings. The evening temperature never reached 100°. In fact the temperature might be said to be almost constantly normal. The pulse was counted morning

and evening, and it varied between 88 and 100. The respirations never exceeded 24. During the six weeks he gained weight to the extent of ten pounds. A cough, which was worse at night and towards morning, was the only symptom present. Elastic tissue and a small number of tubercle bacilli were found in the sputum.

This case was considered suitable for the Koch treatment, because (1) the disease, though well pronounced, had not destroyed a large area of lung; (2) the patient having been under close observation for six weeks before beginning treatment, deviations from the regular course of the symptoms following the administration of the fluid would be more noticeable. Inasmuch as the temperature, for instance, had never reached 100° it would be fair to assume that any elevation to a higher point than that would be the result of the treatment.

On the 3rd January, 1891, he was re-admitted for the purpose of being submitted to Koch's treatment. He told us that there has been no change in his condition since he was discharged. He has lost weight, for he weighed but 110½ lbs. against 118 lbs. on the day of his discharge. The cough has been no better; the expectoration has been scanty. No night-sweats. From time to time there have been slight pains in the upper part of the right chest. Appetite has not been good. Bowels have been fairly regular.

Jan. 12*th*, 1891.—The following notes were taken before the inoculations were begun: A thin, ill-nourished youth, somewhat anæmic. The chest is flat from before backwards, and especially just below both clavicles. Expansion is markedly diminished over upper right front. The chest measurement on a line with the nipple is 30½ inches on expiration and 33 inches on inspiration; the left side measures 15 inches on expiration, 16 inches on inspiration; the right side measures 16 inches on expiration and 17 inches on inspiration.

Right side of chest.—From the apex to the lower border of the third rib there is pronounced dulness on percussion, the lower limit of which is fairly well defined in front, but less so in the axilla, where it reaches to the 3rd rib. Behind there is also

a dull note on percussion as low down as a level midway between the spine of the scapula and its angle, but this lower limit is not so clearly defined as in front or in the axilla. Over this dull area vocal fremitus is increased. The breathing at the apex is decidedly harsh, and perhaps might be called blowing. This state of the breath sounds is uniformly present over the upper part of the lung in front, but behind it is not so marked. Over the front of the right lung, in the axilla and over the upper of the dull area of the back, small moist râles are audible just at the end of inspiration. Above the level of the second rib in front these are of a less moist character. The vocal resonance is manifestly increased over the upper part of the lung, but there is no bronchophony. Over a small area, about one inch in diameter, just under the right clavicle, its existence was suspected.

Left side of chest.—At the upper part of the chest, just under the clavicle, the pulmonary note is not of normal clearness, and the note in the supra-spinous region is of the same character. Throughout the rest of the lung the note is quite clear. There is no increase in vocal fremitus. No adventitious sounds or increase in vocal resonance.

From the 3rd January to the first inoculation on Jan. 12th, the pulse, temperature and respirations were taken every two hours, day and night. The secretions were all examined. The expectoration was daily measured and submitted to bacteriological examination.

Dr. Wyatt Johnston's report on the sputum before inoculation :

Jan. 5th, 1891.—Sputum muco-purulent, thick and tenacious; amount, half an ounce in twenty-four hours ; contains numerous small fragments of elastic tissue. Tubercle bacilli scanty ; not found in every microscopic field, but some present in every specimen examined. They occur singly as a rule. Hardly any other bacteria present.

Jan. 6th.—Sputum one ounce ; same characters as before. A few tubercle bacilli found in every field.

Jan. 7th.—Sputum half an ounce ; same character.

Jan. 8th.—Sputum lost.

Jan. 9th.—Sputum half an ounce. Tubercle bacilli more numerous, about fifty occurring in every field.

Jan 10th.—Sputum one ounce, of same character; bacilli same as yesterday.

Jan. 11th.—Sputum half an ounce. Tubercle bacilli rather more numerous; a few clumps of bacilli found.

Jan. 12th.—Sputum one ounce, chiefly clear mucus, containing tough, opaque-yellow streaks; these contain a few tubercle bacilli in every field.

PROGRESS OF CASE.

First Injection, .001 cc. at 11.50 A.M., Jan. 12th. No change was observed other than that the moist râles were more numerous.

Second Injection, .002 cc. at 3 P.M. Jan. 13th. At 6 P.M. the temperature was 100°. At 10 P.M. complained of dizziness. On following day there was loss of appetite.

Third Injection, Jan. 15th, at 12.10 P.M., .002 cc. No result.

Fourth Injection, Jan. 17th, at 12.10 P.M., .003 cc. Up to date the most important change is a decided loss of weight.

CASE II.—Michael C., aged 28, admitted Jan. 6th, 1891, for the first time, complaining of cough with expectoration and loss of weight. The illness dates from the influenza epidemic of last year, which was said to have left him in a very weakened state. On or about the 1st September last he suffered from severe pain in the side with cough, and was confined to his bed for a week. Since then he has been subject to severe attacks of coughing, which are wont to come on in the evenings and the early mornings. The expectoration has been scanty. About six weeks ago coughed up half a wineglassful of frothy blood, and on one or two occasions since he has noticed bloody streaks in the sputum. No diarrhœa; no night sweating. He says that he has lost 10 lbs. in weight since Sept. 1st.

Family History.—Father died of "pleurisy" at 44, after an illness which lasted two years. Mother died of "inflammation of the lungs" at 54, after five weeks illness. Has two brothers and one sister alive and well. A brother is in hospital now with peripheral neuritis and pulmonary tuberculosis. Three of his sisters died in childhood of scarlatina. One died of phthisis at 28; another sister died of an unknown cause. Father's brother and two first cousins on the mother's side died of phthisis.

State on Admission.—Well built, well-nourished, muscular young man. Former weight said to be 146 lbs. Present weight

138½ lbs. Good complexion; no anæmia. Tongue clean; appetite good; bowels regular; moderate amount of perspiration at night, but no actual night sweats. Cough is present towards night, and is especially troublesome in the morning. The total amount of expectoration in the 24 hours is less than an ounce.

The chest is well shaped; there is deficient expansion on the right side, and flattening below right clavicle. Total measurement of the chest is 36 and 33 inches; total expansion 3 inches.

Right side of chest.—There is distinct dulness from the apex of lung to the lower border of the third rib in front, and to a level one inch below the spine of the scapula. The lower limit of the dull area in front is well defined, but, behind, the note gradually passes into fair pulmonary resonance. Vocal fremitus is not perceptibly increased. Over the dull area the breathing is harsh, and there is prolongation of expiration; small moist râles are audible over this part of the lung as well as at the extreme base, but in the intervening portion of lung no adventitious sounds are audible. Below the right nipple there is a small area over which friction is heard. At the apex, vocal resonance is increased.

Left side of chest.—No physical signs detected. Examination of other organs negative.

From Jan. 6th to Jan. 12th the temperature, pulse and respiration were taken every two hours day and night.

Dr. Wyatt Johnston's report on the sputum:

Jan. 7th, 1891.—Sputum opaque, thick, muco-purulent, half ounce in last twenty-four hours; contains numerous small fragments of elastic tissue. Tubercle bacilli very unequally distributed; sometimes as many as fifty are found in a single field of $\frac{1}{12}$ oil immersion, and sometimes five fields are searched before finding any bacilli. Some clumps of ten to twenty of the bacilli are met with. Micrococcus tetragenus present.

Jan. 9th, 10th, 11th, 12th.—Sputum examined daily; has become more nummular; on the 9th and 12th contained traces of blood; amount never exceeds half an ounce daily. Tubercle bacilli found in every specimen examined, but are never very numerous; not found in every microscopic field.

PROGRESS OF CASE.

First Injection, .001 cc. at 12.10 P.M., Jan, 12th. At 7 P.M. stitch-like pain in right mammary region. No other reaction.

Second Injection, .002 cc. at 3 P.M., Jan. 13th. The temperature reached 101° at 6 P.M. No other symptoms. (The temperature in the six days before inoculation had never at any hour of the day gone higher than 99°.

Third Injection, .003 cc., Jan. 15th, at 12.10 P.M. Result negative. Loss of appetite on the following morning.

Fourth Injection, .003 cc. at 2 P.M., Jan. 17th. No result.

CASE III.—Patrick B., aged 46, a barkeeper for the last thirteen years. History of chronic alcoholism not improbable. No venereal history. The family history points strongly to pulmonary tuberculosis. The mother died at 40; a brother at 26 of consumption. Three brothers and two sisters died between the ages of 10 and 15 years; the exact cause of these deaths could not be ascertained.

The present illness was said to have begun two years ago, when he was confined to bed two or three weeks with a severe cold. He had cough and free expectoration, lost weight, and on several occasions suffered from night-sweats. In three months he resumed work, and with the exception of a slight cold on one or two occasions he has been very well since, though he has never been quite free from cough. About a year ago his throat became sore and his voice hoarse. During the last three months has lost about 14 lbs. There is a history of a slight hæmoptysis about two years ago. Up to the time of admission he has been under treatment for laryngeal tuberculosis.

State on Admission.—A fairly well-nourished man, who has evidently been very muscular and active. Bright complexion. Weight 133 lbs. The voice is very hoarse, and rapidly becomes more so when he speaks for any length of time. Tongue clean; appetite poor; bowels generally confined. Never had any diarrhœa or hæmorrhoids. The chest is well formed; total expansion, two inches. Slight flattening above and below both clavicles, but more so on the left than on the right side. At the left apex there is slight dulness and a few dry râles. No other adventitious sounds are heard in any part of the chest. Vocal resonance is increased at both the apices. Pityriasis versicolor in

dark patches over the chest and abdomen. Pulse 80, regular; respirations 24. The liver dulness measures but three inches in the right mammary line. The urine is high-colored, specific gravity 1030; no sugar or albumen.

Condition of the Larynx.—Dr. Major reports as follows:—"Jan. 9th, 1891.—Swelling and œdema of the right arytænoid region; ulceration of the surface and edge of the posterior two-thirds of the right vocal cord and posterior third of the left vocal cord. General redness; slight thickening of the epiglottis."

The patient was kept under observation from January 5th to January 12th, and two-hour observation, as in the other cases, were made. The temperature has been found to range between 98° and 100.6°. The pulse has generally been about 80° and the respirations 24.

Sputum examined on Jan. 6th, 7th, 9th, 10th, 11th and 12th. The quantity varies from half an ounce to three ounces. It is composed for the most part of clear viscid mucus, in which small opaque streaks occur. These are formed of mucus strings with leucocytes and large epithelial cells. Several specimens of the sputum were examined on each occasion for tubercle bacilli, always with negative results.

PROGRESS OF CASE.

First Injection, .001 c.c. at 11.40 A.M., Jan. 12th. The temperature was 100° at the moment of inoculation and began to rise almost immediately, reaching 103° at 9 o'clock, when there was chilliness, but no distinct rigor. The following day no change in his condition was noticeable.

Second Injection, .001 c.c. at 11.30, Jan. 14th. No reaction.

Third Injection, .002 c.c. at 12.10 P.M., Jan. 15th. The temperature rose gradually to nearly 101°. Dr. Major reports no change in the larynx.

Fourth Injection, .002 c.c. at 2 P.M., Jan. 17th. No reaction. Temperature has been about 99° in the whole twenty-four hours.

In all three cases, no change has been noted in the cough or in the expectoration.

Retrospect Department.

RETROSPECT OF PATHOLOGY.

By Wyatt Johnston, M.D.,
Demonstrator of Pathology, McGill University.

Recent work bearing upon the possible parasitic nature of cancer. See also *Retrospect* for April, 1890.)

Parasitic (?) Bodies found in Cancers.—Dr. Wm. Russell of Edinburgh reports (*British Medical Journal*, Dec. 13, '90) the finding of a peculiar and characteristic organism in microscopic sections of cancer. These bodies varied considerably in size, ranging from half the size of a red blood corpuscle to one and a half times its size (4 μ to 12 μ in diameter). They were characterized by a peculiar staining reaction which caused him to give them provisionally the name of "Fuchsin" bodies.

"Directions for staining: 1. Saturated solution of Fuchsine in 2 per cent. carbolic acid in water. 2. One per cent. solution of iodine, green (Grübler's), in 2 per cent. carbolic acid in water. Place section in water. Then stain in fuchsine ten minutes or longer. Wash for a few minutes in water. Wash for *half a minute* in absolute alcohol. From this put the section into the solution of iodine green and allow it to remain, well spread out, for *five minutes*. From this rapidly dehydrate in absolute alcohol, pass through oil of cloves, and mount in balsam."

Sections from forty-three cases of cancer were examined, the bodies being found in all of them. The cases included "malignant epithelial growths" of the lips, face (rodent ulcer), antrum, mamma (both primary and recurrent), prepuce, cervical glands, stomach, liver, spleen and abdominal glands, suprarenals, uterus and ovaries.

In order to check these observations, sections from over fifty specimens of non-cancerous tissue were examined, with almost invariably negative results. The fuchsine bodies were not found in sections of inflammatory lesions of the lungs, bowels, or meninges, nor in tuberculosis. The examination of sections from an embryo at the 4th month, fatty and amyloid degenerations, different forms of sarcoma, and, in short, all the other kinds of

pathological material that he could think of, gave negative results.

No details are given as to the methods of hardening used beyond the fact that the bodies were found in a number of old laboratory pickles prepared by the ordinary methods.

The bodies were only found in five specimens which were not distinctly cancerous. In two of these—a case of chronic sinus and one of chronic ulcer of the leg—he thinks that external infection was possible, and points out that chronic ulcers tend to become cancerous at times. They were also present in one case of obstinate syphilitic ulceration, where the disease was so intractable as to suggest the possibility of there having been dual infection.

Dr. Russell is inclined to regard his "fuchsine bodies" as a fungus belonging to the yeast group. No very clear information as to its minute structure is given, and it is difficult to see why it has been thus classified. To determine the nature of those bodies more delicate methods of hardening and staining will be required, and, as any attempt to show a connection between these bodies found *in sections* of hardened tissues and any appearances seen in the fresh cells, is conspicuously absent, this portion of the work seems absolutely valueless.

On the other hand, the large amount and variety of non-cancerous material examined with negative results, and the constant presence of the bodies in all forms and varieties of cancer, if confirmed by other observers, suggest a new and valuable means for diagnosing cancers under the microscope. The method is simple enough to be used by anyone fairly familiar with microscopical werk.

Prof. W. H. Welch of the Johns Hopkins Hospital, Baltimore, (*J. H. Bulletin*, No. 8, 1890), demonstrated microscopical specimens of carcinoma which showed peculiar intercellular formations corresponding to those described as sporozoa and similar parasites, and presumably to those described by Russell, in specimens preserved in Fleming's fluid (chrom.-acet.-osmic acid mixture), Dr. Welch thinks it premature and unwarranted, from any evidence yet brought forward, to regard them as sporozoa

or any other form of parasite. He thinks these bodies, as far as epithelium is concerned, are explainable (1) as degeneration products of the epithelial cells; (2) as fragments of leucocytes taken into the cells.

Paget's Disease of the Nipple.—Dr. A. B. Macallum of Toronto (*Canadian Practitioner*, Oct. 16, 1890) has found in two cases of duct cancer of the nipple following chronic eczema peculiar bodies corresponding to those described by Darier as sporozoa. Dr. Macallum found these bodies in great numbers in epithelial cells, forming the crusts on the surface; as well as in the deeper layers of the epidermis. He thinks the presence of these bodies may be of considerable diagnostic value in distinguishing cases of Paget's disease from simple eczema, though they are liable to be confounded with the somewhat similar bodies found in epitheliomata. He suggests that as the exact nature of these bodies is incompletely understood, they should be called provisionally "endocytes."

Klebs (*Deutsche Med. Wochenschrift*, Nos. 24, 25, 1890) gives the results of inoculation of cancerous particles into a breed of white rats, in which spontaneous cancer had been observed. The result was in most cases entirely negative. In a few instances transient epithelial growths developed from the implanted tissues, but the stroma of carcinoma was wanting. He has carefully investigated the peculiar bodies in cancer cells, and thinks that they are merely a substance secreted by the cell or a degeneration of its substance. In the implanted cancers these "hyaline" bodies never multiply or increase, but always become absorbed. [These correspond apparently to the fuchsine bodies of Russell.] Klebs considers that cancer must still be regarded as a spontaneous increase in the vegetative function of tissues (idioplasia).

In a subsequent communication (*ibid*, No. 32, 1890), Klebs deals with the question of what constitutes the earliest stages of carcinoma. In one apparent case of pacchydermia of the larynx, which subsequently became manifestly cancerous, he was able, when the growth was first removed, to detect a dilated cystic condition of the submucous lymph spaces. This he regards as

favoring an invasion of the epithelial cells. A view somewhat similar to this was advanced by Dr. H. F. Formad some years ago.

It seems to be generally admitted that certain structures are found in cancer cells which are absent from normal tissues. These bodies, regarded by some as parasitic in nature, appear to be nothing more than portions of cancerous tissue which have undergone degeneration.

Reviews and Notices of Books.

The Time-Relations of Mental Phenomena. By Jos. Jastrow, Professor of Psychology at the University of Wisconsin. New York: N. D. C. Hodges, 47 Lafayette Place.

Prof. Jastrow is one of the most distinguished members of the modern school of experimental psychologists. In this work he shows what has been done up to the present time in estimating the time relations of mental phenomena, and indicates what gaps there are to be filled and the end to be achieved.

The author starts with a quotation from Johannes Müller, which well illustrates the dangers of prophecy in matters of a scientific nature. Müller, in 1844, said that "we shall probably never secure the means of ascertaining the speed of nerve activity," but, as Prof. Jastrow points out, a decade had not passed by before Helmholtz ascertained the rate in the nerve of the frog to be eighty feet per second. We now, however, are able to estimate with a fair degree of accuracy not only the physiological but also the psychological elements in the process beginning with sensory stimulation and ending in motor contraction.

Outlines of Physiological Psychology. By Dr. Geo. T. Ladd, Professor of Philosophy in Yale University. New York: Charles Scribner's Sons. 1891.

It is rarely that we have reviewed a book with so much pleasure as Prof. Ladd's larger work on the same subject some time ago. But it was somewhat too large for a numerous class, and we think the author has acted wisely in issuing a smaller

work on substantially the same plan and, happily, of kindred worth. The book is really what its title implies; and in 500 octavo pages a large field is covered with the same discrimination and sound judgment so conspicuous in the earlier work.

We are occasionally asked what work in psychology may be read with profit by a medical man, whether an undergraduate or a practitioner. At last we think *the* book for such enquirers is found. There is no inconsiderable amount of sound physiology set forth in this book in a clear and impressive way; and there are special advantages in reading the physiology of the nervous system as looked at from the point of view of the psychologist. Never was there a time when psychology was of such immediate interest to the medical man as now, seeing the great and rapid advancement in the knowledge of the nervous system of man in health and in disease.

As a text-book the present work must meet the case of a large number of students who have not the time and patience to wend their way through the earlier volume; though, if they do succeed in giving the latter a careful perusal, we think they will not regret it. This last work abounds in illustrations of a most useful kind, and the print is clear and large. We believe it is one of the books of the day that is really needed, and hope that it may fall into the hands of many students and practitioners of medicine, as well as others. W.M.

Sociology: Popular Lectures and Discussions before the Brooklyn Ethical Association. Boston: James H. West, Publisher. 1890.

By sociology is meant the science of social evolution. "The work is one of salutary caution rather than definite and formal instruction concerning the duties of the hour." The lectures published in the present work are on a variety of topics, but as a whole bear on the main problem of social evolution. A few of the titles may illustrate this statement: The Relativity of Knowledge, Primitive Man, Growth of the Marriage Relation, Evolution in Medical Science, Education as a Factor in Civilization, etc. etc. To the physician who wishes to be more than a

practitioner, and who watches with interest the tide of human affairs, this book will possess many attractions. It cannot but furnish suggestions which, amid the anxieties of medical practice, will direct his thought into wider channels and perchance shape his philosophy on truer lines. Unless the doctor reads *something* of this kind he is very apt to degenerate, or at least never to reach the highest developments of manhood. "God-like is the physician who is also a philosopher."

A Treatise on the Diseases of Infancy and Childhood. By J. Lewis Smith, M.D. Second edition. Philadelphia: Lea Bros. & Co. 1890.

Notwithstanding the many excellent volumes that have been issued recently on diseases of children, the work of Dr. J. Lewis Smith easily holds a front place. Its several editions have all been thoroughly revised. In the present one we notice many of the chapters entirely rewritten. Full notice is taken of all the recent advances that have been made in the sterilization of infant's food, in the treatment of diphtheria, in intubation, and of the investigations relating to the bacterial origin of many of the diseases of early life. As its author states in the preface, the necessary revision has virtually produced a new book. In the amount of information presented the work may properly be considered to have doubled in size, but by condensation and the exclusion of all obsolete material, the volume has not been rendered inconveniently large. Many diseases not previously treated of have received special chapters, including many of the diseases of the new-born, also epilepsy, tetany, and appendicitis. The article on intubation has been written by Dr. O'Dwyer, and will be read with much interest. Among the more important articles may be mentioned those on Cyanosis, Scarlet Fever, Diphtheria, Pleurisy and Cerebro-spinal Fever, which are particularly valuable and exhaustive. Yet, withal, is the work a very practical one. Especial care has been taken that the directions for treatment shall be particular and full. In no other work are such careful instructions given in the details of infant hygiene and the artificial feeding of infants.

We have no hesitation in cordially recommending this work. It is, moreover, pleasantly written, and both type and binding are excellent.

Antiseptics in Obstetric Nursing. By JOHN SHAW, M.D. London: H. K. Lewis. 1890.

This is an expansion of the course of lectures delivered by Dr. Shaw in 1889 to the class of midwives and monthly nurses at the Hampstead Home Hospital, and is intended as a text book for nurses and midwives. He says that the two great revolutionary and epoch-making forces of modern medicine are *Anæsthetics* and *Antiseptics*, and he traces briefly the effect of the latter upon the practice of obstetrics and gynæcology. He extols chiefly Semmelweiss and Lister, and gives a short account of the former's work at the Vienna Krankenhaus. He considers the predisposing and exciting causes of septicæmia, describes the action of germs and germicides, and enters fully into the antiseptic precautions which are now considered essential in gynæcology and obstetrics. He gives much useful information in pleasant readable form, his principles are sound and his advice wholesome, though in some particulars his methods are more cumbersome and complicated than those we are accustomed to. Students and practitioners, as well as nurses, will find here many useful hints and many points not usually dwelt upon in the sysmatic text-books.

Electricity in the Diseases of Women. By BETTON MASSEY, M.D. Second edition, revised and enlarged. Philadelphia and London: F. A. Davis. 1890.

This useful little text-book treats particularly of the application of strong currents, and is enlarged and more complete, as a treatise, than the first edition, which we reviewed most favorably in a recent issue of the JOURNAL. We can only repeat what we then said, that it was the most useful book for those who were taking an interest in the important subject of the treatment of diseases of women by electricity. We cordially recommend it.

Society Proceedings.

MEDICO-CHIRURGICAL SOCIETY OF MONTREAL.

Stated Meeting, November 7th, 1890.

F. J. SHEPHERD, M.D., PRESIDENT, IN THE CHAIR.

Drs. Muirhead and Thompson were elected members of the Society.

Syphilitic Osteitis.—DR. JOHNSTON exhibited specimens of severe condensing osteitis of the skull-cap and tibia, due to syphilis. From the same case, several black pigmental plaques were found situated in the pharynx on the left side, at the level of the glottis. The mucosa was thickened and deeply pigmented; the submucosa beneath was white, dense and very firm. There was no evidence of scarring or ulceration in the neighborhood. This condition was possibly due also to syphilis.

Severe Syphilitic Ulceration of the Rectum leading to Perityphlitis.—DR. JOHNSTON showed to the Society, from the same case, this very interesting specimen, which is reported in full in the December number of this JOURNAL.

DR. SHEPHERD, referring to the above specimens, dwelt upon the interest of a case with such widespread lesions, and the possible beneficial results that might have been obtained from anti-syphilitic treatment; alluding to the perityphlitis, it was his opinion that an operation would have been justifiable if suppuration had occurred.

Chronic Gastric Ulcer, Perforation and Fatal Peritonitis.—DR. REDDY related the clinical history of the case. The patient, a girl of 20, was acting as wet nurse when she first consulted him a few months ago. She then had symptoms of indigestion, for which pepsin was given. Two days later she felt well, and remained so for the following twelve days. When, apparently, after an undue exposure to cold, she was seized with severe abdominal pain, and soon developed all the symptoms of an acute peritonitis. Salines were given and hot stupes applied. The pain was relieved, and for some hours the patient appeared much better; when she complained of slight pain in the left hypochon-

drium, vomited once, and suddenly died, thirty-six hours from the onset of her illness. Dr. Reddy remarked that at no time, during the illness, were there any symptoms pointing to the primary disease. He had since found out that the patient had been under treatment a year ago in the Montreal General Hospital for gastric ulcer. Dwelling upon the obscure symptoms of many of these cases of ulcer of the stomach, he mentioned the case, which had come under his notice, of a nurse who had died suddenly without ever evincing any signs indicating the lesion in the stomach.

Dr. Johnston exhibited, for Dr. Reddy, the stomach, which showed a small perforation in the base of a chronic gastric ulcer. The ulcer was one-half by one-quarter of an inch, situated posteriorly on the lesser curvature, midway between the pylorus and the fundus. About the ulcer were distinct, radiating fibrous bands in the submucosa. There was general acute purulent peritonitis with very marked cloudy swelling of the liver, kidneys and heart, the latter being probably the cause of the very sudden death noticed in the case.

Discussion.—Dr. Shepherd did not think that the relief from pain which followed the administration of salines could be attributad to the action of the salines; he rather believed that it was the quiet which in many cases precedes death.

Dr. Lapthorn Smith cited his and others' opinion that salines alleviated pain in acute peritonitis.

Dr. MacDonnell dwelt upon the prevailing idea of the essential union of peritonitis with pain. We were too apt to regard peritonitis as always accompanied by pain. He referred to a fatal case of appendicitis which had been under his care in the hospital. The patient had been free from pain for two days previous to his death. Had he not been deceived by this lull in the symptoms, he believed that operative interference might have proved successful. Dr. M. thought that the explanation of the disappearance of the pain which occurs in some cases of acute peritonitis might be attributed to the peritoneum becoming accustomed to the inflammation.

Submaxillary Calculus.—Dr. Hutchinson exhibited this

specimen, which was about the size of a marble. The patient, a man about 45, had come to him complaining of a sore mouth and difficulty of mastication. A hard lump could be felt, which proved to be a calculus, around which suppuration had commenced. It was situated in the Whartonian duct.

Dr. Shepherd remarked that these cases were comparatively rare. He referred to a specimen which Dr. Hingston had shown to the Society. Dr. H. had removed it from a patient who had been sent to him as the apparent subject of malignant disease. There had been considerable swelling and suppuration.

Dr. Lapthorn Smith stated that he had exhibited before the Society a calculus the size of a pigeon's egg which he had removed from the parotid gland.

Fibroma Pendulum.—Dr. England brought before the Society a middle-aged man with a tumor, pendulous and pedunculated, growing from the upper and inner part of the thigh. The tumor, in size and appearance, was not unlike the scrotum. It was eight months since it was first noticed, and was growing more rapidly of late. Patient complained of no pain beyond the inconvenience it gave him.

Dr. Johnston would not express himself positively as to the nature of the tumor short of a microscopical examination. He mentioned cases of congenital growths which, after a period of quiescence, suddenly took on active action.

Dr. Shepherd had seen several cases somewhat similar to the one under examination. He believed it allied to fibroma molluscum, found singly or in connection with smaller growths.

Enormous Enlargement of the Liver.—Dr. R. L. MacDonnell related the history of a female patient who had been sent to his clinic at the Montreal General Hospital for advice. She was 30 years of age, married, had three children and two miscarriages. There was every appearance of good health. There had never been anæmia, jaundice, ascites, nor gastric derangements. Ever since her first child was born she has suffered from occasional attacks of pain in the right hypochondrium, with a sense of discomfort at times, but she has not been laid up in such a way as to prevent her doing housework every day. There is

no history of alcohol, but syphilis is highly probable, since her husband has been a man of very dissolute habits, and she has had a purulent uterine discharge for many years. The abdomen is not distended, but the walls are remarkably flaccid. The liver can be plainly felt extending downwards to a line two inches below the umbilicus, filling up the greater part of the abdominal cavity. The outline is uniform, and the cleft between the lobes can be distinctly felt. On palpation, the enlargement is uniformly dense and resisting. There is no fluctuation and the surface is quite smooth. The area of hepatic dulness in the right mammary line extends from the third rib to a line two inches below the umbilicus, and measures thirteen inches and a half. In the axillary line the liver extends as high as the 6th rib, and the dorsal line, its upper limit, is as high as the 9th rib. The increase is therefore very much greater in front than behind. No splenic enlargement was discovered. Examination of the urine afforded negative evidence of disease. Dr. MacDonnell remarked that this was the largest liver he had measured, and that he thought it was larger than any on record. There were several noteworthy features in the case: (1) the excellent condition of the patient's health; (2) the absence of evidence of implication of the kidney or of the spleen was against the diagnosis of waxy disease; but still, it would be impossible to imagine a liver corresponding to a greater extent with every detail of the classical description of waxy disease. Moreover, there was fair evidence of a combination of two potent causes of waxy disease—chronic suppuration and syphilis. Cases are, however, on record both of cases of amyloid disease of the kidney in which no evidence was given by the urine, and of cases of amyloid disease of the liver in which the kidney was not involved. He would make further observations of the case and report at a later date.

Typhoid Fever in an Infant Eight Months Old.—Dr. F. R. England read the following case report:—

"Mr. President and Gentlemen,—The case which I have ventured to bring before you to-night is one of typhoid fever occurring in an infant eight months old, and before reading a

report of the case I shall not attempt to make any other apology than acknowledge that there is nothing remarkable or peculiar about the case in any way. I have reported it simply because typhoid in very young children is an extremely rare disease—at least is a disease rarely recognized in infants.

"A. L., an artificially fed babe, aged eight months, small, thin and delicate-looking, with a rather large and irregular-shaped head (from lying the greater part of the time on the right side), covered well with long auburn hair. Family history good. In the month of June, which was the commencement of our infantile trouble in the city, he had some difficulty in digesting his food, and had one or two attacks of vomiting and diarrhœa, also an attack of bronchitis. The parents, acting on my advice, went away to the country for the hot months, where they remained until Sept. 18th. While they were in the country, the mother said he got on well and gained in size and weight.

Present attack.—They had not been home more than ten days when his stomach and bowels again became deranged. There was some vomiting and a little diarrhœa. He was worrisome, restless and feverish. I was sent for on the morning of Oct. 2nd, the third day of the illness. The pulse then was rapid, 140 per minute; temperature 102½°F.; respirations not much accelerated. Examination of the chest showed the heart and lungs to be normal. The abdomen was much distended and tympanitic. Remembering the old digestive trouble in the early part of the season, and being suspicious as to the quality and freshness of the milk supply, I put down the disturbance as being probably due to an entero-colitis, and treated the case accordingly; beginning with a small dose of castor oil and carefully regulated the feeding. After watching the case for a week, and doing all I could to relieve the symptoms, I found my patient no better, the temperature still remaining high, from 102½°F. in the morning to 103° and 104°F. in the evening; the remission usually beginning after midnight. The pulse was small and rapid, varying from 140 to 160 per minute, the heart's action feeble, and the abdominal distension not at all lessened. With these rather grave symptoms persisting so long in so young a child, I began

to look upon the case as being somewhat serious, and was at a loss to explain, to my satisfaction, the real cause of all the trouble. About this time, on examining the abdomen, I found the spleen enlarged, so much so that I was able, by gentle pressure over the abdomen, to feel its smooth, firm surface beneath my fingers, extending fully two inches below the ribs. The liver could also be felt about an inch below the costal cartilage. In a day or two I was greatly surprised to discover an eruption over the abdomen, chest and back, consisting of numerous small, isolated, bright rose-spots, about the size of a pin's head or a little larger, which, if seen in the adult, would at once be recognized as the typical typhoid eruption. The appearance of these spots, the persistent high temperature, the tympanitis, with gastro-intestinal derangement, evidenced by vomiting, pain and looseness of the bowels (though at no time was there much diarrhœa), together with a decided enlargement of the spleen and liver, compelled me to look upon the case as one of typhoid fever, though I had never before met with a case or remember of seeing one reported in so young a child. The temperature during the second week of fever remained high, ranging from 102° to 103½°F. The tongue and buccal surfaces were red and dry, the gums swollen and hot. Slight bronchitis developed during the second week, causing a dry, irritating cough. Headache seemed to be present, for the hands were constantly kept to the head or the ears pulled. The eyes were sensitive to light, and were kept closed if the cradle happened to be turned towards the window. At the beginning of the third week the temperature at the evening exacerbation continued about the same, but at the morning remission it was from 1° to 2° lower than it was during the second week; at the end of the third week the temperature had become intermittent in character, each exacerbation falling lower and lower, until the normal was reached on Oct. 17th, about twenty days after onset of the fever. The tympanitis remained throughout, but disappeared immediately on the temperature falling to normal. The nourishment relied upon was diluted cow's milk, rice-water, and raw meat juice, or bovinine as a substitute for it. The medicinal treat-

ment was wholly symptomatic. Twelve drops of brandy every two hours was given throughout with, I believe, much benefit in sustaining the heart's action. A full dose of quinine was given in the afternoon if the temperature was up to 103°, and the same dose repeated in the evening if the fever remained high. Tepid sponging of the body and cold to the head were systematically carried out. Small linseed tea enemata, with a little turpentine added, were given occasionally, and thought to relieve the distension by causing flatus to be passed per rectum. Notwithstanding the long and rather severe course of the fever, no complications or sequelæ followed, and the infant made a good and uninterrupted recovery.

"In support of my diagnosis, I may add that the father of my patient is principal of one of our boarding schools, and during my attendance three of the pupils were taken ill and obliged to leave the school with symptoms of typhoid fever."

Discussion.—Dr. James Stewart was struck with the low temperature throughout the illness.

Dr. MacDonnell also believed the temperature low, particularly in the case of a child suffering from what he believed to be indisputably typhoid fever. Children were so susceptible, from the slightest derangements, to elevation of temperature, that he would have expected, in the present case, a higher range of temperature.

Dr. Johnston asked about the intestinal symptoms. He had examined the fœtus in many cases of abortion from typhoid fever; though he had found the typhoid bacillus, the intestinal conditions were but slightly marked, and there was no ulceration. He believed that infants were not so exposed to the entrance of bacteria.

Dr. M. C. McGannon mentioned a case in his practice of a child, three years old, who had regularly gone through an attack of typhoid fever.

Anchylosis of the Spine.—Dr. Molson, referring to the case of anchylosis of the spine which he had shown to the Society at a previous meeting, said that the patient had been given an anæsthetic and carefully examined, and the case pronounced one of true anchylosis.

Stated Meeting, November 21st, 1890.

F. J. SHEPHERD, M.D., PRESIDENT, IN THE CHAIR.

Dr. J. Elder was elected a member of the Society.

Spina Bifida.—DR. JOHNSTON exhibited this specimen for Dr. Gurd. It was a female fœtus, apparently about the 6th month. The extremities were well formed; amnion nowhere adherent. There was well-marked acrania (exencephalia) and spina bifida. In addition, there was a very sharp angular curvature of the spine forwards, with moderate double lateral curvature in the lower dorsal region. The state of the nervous system could not be made out accurately, as the specimen was not received quite fresh. Recent researches by v. Recklinghausen and Klebs tended to show that the primary cellular disturbances, terminating in the production of spina bifida and rachischisis, took place at a much earlier period than had been hitherto supposed. Klebs even considered that the initial error of development was certainly to be placed as early as the time when active cellular growth was commencing in the notochord, and was even inclined to place them earlier still, at a period before the closure of the medullary canal, possibly even to abnormal arrangement of cells about the primitive groove, when the folds of the amnion were being formed. This view would materially alter the bearing of so-called maternal impression in this condition, as the impression, to be effective, must thus have occurred about the time when the first menstrual period was missed, presumably before the mother was conscious of being pregnant. A number of well-preserved embryos in the early stages would be necessary to settle this question, and in order to be of real service in this way the specimens should be put in many times their volume of strong alcohol, a few hours, at the latest, after the abortion occurred, as by the end of twenty-four hours the delicate nervous structures were too far altered by decomposition to repay careful study.

DR. GURD said that this was an $8\frac{1}{2}$ months fœtus, and the second similar kind of monstrosity which this lady had given birth to. He had exhibited the first one about three years ago.

It also had an encephalocele. He thought the deformity might be put down as resulting from maternal impressions, as the mother had each time, during pregnancy, visited her mother, who has been suffering from a form of insanity for about five years. Mrs. L., who had given birth to this monster, has three well-formed, intelligent children living, one of whom was born about two years ago. This monster came with the arm presenting, but as it was felt to be small, and as the abdomen indicated a small child, turning was not resorted to, and the case was left to nature for its delivery. The absence of a cranial vault did away with the usual difficulty of a cross-birth. The child weighed two pounds. There was an unusually large amount of amniotic fluid present.

Discussion.—Dr. Shepherd had found in many of these cases a musculis sternalis. It was absent in the present case.

Dr. F. W. Campbell did not think that in the present instance the abnormality in the development of the fœtus could be attributed to maternal impressions.

Dr. Mills said that with respect to the representation in offspring of conditions in the ancestors, observation seemed to show that defects of the nervous system were especially liable to a varied or multiple manifestation. Insanity was not always insanity in the offspring, but might be some other deviation from the normal, expressing itself, however, chiefly in the nervous system. And when one considered that at the outset the whole of the influence of ancestors was represented in two cells, the ovum and sperm cell, which cells, by union, segmentation, growth and development, gave rise to the whole being; and that during this the environment might be very variable, it was possible to understand even great organic differences, not to mention dynamic or functional ones. The whole brain at first was represented by but a few cells, and it seemed, possibly owing to environment, that in some cases hereditary tendencies might work out into the total absence of certain cells when there was much hindrance to normal development, and in other cases only to an imperfect functional action of cells present in the usual numbers and locality; hence a great variety of results

from modifications at an early period of the history of the embryo. He could conceive this hereditary weakness of parts resulting, not in a corresponding functional defect in offspring, but in actual deficiency of parts; and that might have been the case in this monster, but, of course, it could not be demonstrated.

Rare Form of Tumor of the Kidney.—Dr. Jas. Bell then read a paper on this case, which appears in the present number of the Journal.

Discussion.—Dr. Johnston believed the tumor to be of the nature of an adenoma of the kidney, and showed a series of specimens illustrating the principal forms of adenomata of the kidney.

Dr. Mills said there were three ways in which to account for the peculiar character of the contents of the cavity of the tumor. Either the fæcal odor was due to the agency of bacteria that had in some way got into the sac and acted on its contents, as they do in the intestines, and these give rise by their action to those chemical compounds responsible for what we term a fæcal odor. Or the odor might be due to the absorption by tho by the kidney (diseased one) of this body from the blood of the compound after it had passed into the blood—no doubt a normal action of the kidneys—at all events when skatol and indol were in excess. Or, again, the kidneys may normally remove from the blood bodies usually excreted in greater abundance by the intestines. The last two supposed cases were not in opposition, as both might happen together. For his own part, he had long been convinced that the excretions were much more complex than our analyses made them. If all the excretory organs were considered supplementary to one another, each possibly removing, in variable quantity, at least some of the bodies removed or manufactured from the blood, he believed the physician would have a truer and more useful view of eliminative processes. He had observed that in more than one portion of the body the secretions of parts were characterized in a way that suggested that they took on the nature of excretions that were, in some of their peculiarities, more in harmony with what was recognized commonly as the normal in those regions. He would instance

the excretions of sebaceous glands and the mucous membrane of the nose, pharynx, etc. Micro-organisms might have something to do with this, but the general principles he had referred to seemed to him very inadequately recognized both by physicians and physiologists, and were of great practical importance.

Dr. Roddick had been present at the operation. It occurred to him that it was very likely that this fæcal odor might have been due to the close contact of the bowel to the tumor, so that gases from the bowel reached the cavity of the tumor, or else, to the entrance of bacteria. He remarked that in many cases of abscess cavity in near neighborhood to the intestines a marked fæcal odor was perceptible where there existed no apparent communication.

Dr. Smith agreed with Dr. Roddick, and believed the interchange between the bowel and the sac to be more or less osmotic.

Dr. Shepherd said that an abscess near the abdominal cavity never occurred without fæcal odor.

Dr. James Bell, in replying, said that he agreed with Dr. Mills as to the probable cause of the fæcal odor which, at the time of the operation, was so powerful that he thought there existed a communication with the bowel. A close examination at the post-mortem proved the contrary.

Dr. Johnston, referring to the very penetrating fæcal odor, remarked that intestinal gases alone, without the presence of bacteria, could not produce it. Bacteria cut off from air usually produce a different odor. The intestinal bacteria had entered the cavity of the tumor, and there, acting in a closed sac, had produced this very penetrating fæcal odor.

The Extra-Peritoneal Treatment of the Pedicle in Abdominal Hysterectomy for Fibroids.—Dr. Lapthorn Smith read a paper on this subject. Referring to those fibroids which were not amenable to Apostoli's method, and in which an operation was necessary, he urged the choice of abdominal hysterectomy, and the extra-peritoneal treatment of the stump. Dr. Price of Philadelphia, who employed this method, had had twenty-three consecutive hysterectomies without a death. The death-rate of the best operators using the intra-peritoneal method of treating

the stump was as high as 50 per cent. The advantages of the extra-peritoneal method were :—

1st, The speed with which the operation could be completed, a very important factor in producing a low death-rate ;

2nd, The absolute security against hemorrhage, which is either directly or indirectly the cause of most of the deaths by the intra-peritoneal method. It is concealed, and the patient may die from hemorrhage without the operator's knowledge, while with the extra-peritoneal method, not a drop of blood could be lost without its being seen ;

3rd, Even if hemorrhage were diagnosed in the intra-peritoneal method, its arrest would necessitate a serious second operation by the operator himself. In the extra-peritoneal method, the nurse could instantly stop it by making a quarter of a turn of the serre nœud ;

4th, By the intra-peritoneal method, it is absolutely impossible to sew the stump in such a way as to completely arrest oozing, owing to the œdematous nature of the tissues, and to the fact that the few ounces of bloody serum left in the cavity would offer a culture field for bacteria, with the results of septic peritonitis, which he had found present in those fatal cases so treated, in which the patient had not died from concealed hemorrhage. With the extra-peritoneal method, there is little or no oozing ; but what little there is, is absorbed by the dressing and removed every few hours ;

5th, In either case, if adhesions have been torn, a drainage-tube must be used ;

6th, The constriction of the elastic band or other means of controlling hemorrhage during the preparation of the stump for intra-peritoneal treatment, causes paralysis of the blood-vessels and sometimes death of the peritoneum. In one case he had found the whole stump sloughing. With the extra-peritoneal method, downward sloughing of the stump has sometimes occurred, but this could be avoided by taking care to exert less pressure on it with the serre nœud ; as a rule, far too great force is applied ; only enough should be applied to barely control the hemorrhage, the wire being gradually tightened by the nurse on the appearance of oozing ;

7th, Although the extra-peritoneal method gives an enormously smaller death-rate than the intra-peritoneal method, neither is an ideal one. The only ideal method is (1) removing the tumor by abdominal section, leaving a rubber band on the stump, (2) dropping the stump into the abdominal cavity, (3) thorough disinfection of the vagina, and (4) vaginal extirpation of the stump, leaving lock forceps on the broad ligaments.

When this method is thoroughly known and practised by the best operators, the death-rate will probably fall to almost nothing. Dr. Mary A. Dickson of Brooklyn claims that she was the first to employ this method.

Dr. Bell, referring to the dangers of catgut mentioned in the course of Dr. Smith's paper, said that he used catgut when prepared by himself, and had had no occasion to regret its use. It could with proper care be perfectly sterilized.

Dr. Roddick thought that the rigid drainage-tube used in abdominal surgery might possibly do harm, and believed some more pliable material would be generally adopted.

Dr. Smith, in his reply, remarked that he condemned commercial catgut, but not that specially prepared by the surgeon himself.

Appendicitis.—Dr. J. H. B. Allen related the following clinical history :—Chas. B—, aged 26, consulted him about the 16th May last for intense and constant pain about the umbilicus. Patient had always enjoyed good health with the exception of an attack of colic a year ago, which lasted a few days, and was relieved by poultices and a free purge. He had first felt the pain the day before he saw Dr. A. The patient was unable to stand erect. There was no vomiting, and the bowels had moved once. On examination, there was marked tenderness in the right iliac region ; no signs of tumor ; pulse 66 ; temperature 101.2°. A quarter of a grain of morphia was given hypodermically and an enema and poultices ordered. Patient did not improve, and on the 17th the symptoms had become more aggravated. The enema had not acted, the bowels had not moved for 48 hours ; vomiting had now set in, and was almost constant. Abdomen distended and tender ; no dulness on percussion and no tumor

felt. Temperature higher; pulse 66. Thinking an operation necessary, Dr. Shepherd was called in consultation. It was decided to give the patient a drachm of sulphate of magnesia, and operate the next morning should there be no improvement. A few hours later flatus was passed with considerable relief. The next day, patient's condition being improved, the operation was deferred. A large enema of soap and water, with half an ounce of turpentine, was given, which brought away a considerable amount of fæces. The patient improved steadily from this out, and made a good recovery. Dr. Allen believed the case to be one of appendicitis. The onset was sudden, with signs of obstruction and localized tenderness. There was no history of biliary calculi, and no calculi were found in the fæces. The history of his illness a year previous favored the appendix. The absence of the tumor, he thought, could be explained on anatomical grounds, as shown by Dr. Ransohoff in a recent paper. The appendix being deeply seated behind the cæcum and below the mesentery of the ileum, abscess about it may continue for some time without the occurrence of a tumor. He said the writer had directed attention to another clinical feature of many cases of appendicitis, the occurrence of intestinal obstruction which this case showed very well, and was probably due to the pressure of the thickened appendix upon the ileum from below and behind.

Dr. Shepherd mentioned that many cases of catarrh of the appendix passed off without further pathological change.

Stated Meeting, December 5th, 1890.

F. J. Shepherd, M.D., President, in the Chair.

Fibroid involving Posterior Wall of Uterus.—Dr. George Armstrong exhibited this specimen, which he had removed from a patient aged 31, married ten years, the mother of one full-grown child. The patient had been in fair health until last January, when menstruation became profuse; she was unwell twice a month, each time lasting thirteen days. These symptoms continued until October, when she was seen by Dr. Armstrong.

She was then very anæmic. Under examination, the cervix was found lacerated and the fundus somewhat enlarged. Nothing further abnormal was noticed. The cervix was then dilated and a fibroid found involving the posterior wall of the uterus, one-fifth of its surface being adherent to the uterine wall. The patient made a good recovery. Her menses were delayed, not reappearing until the 23rd November, six weeks from the date of the operation.

Submucous Fibroid.—Dr. Armstrong also showed this specimen, which he had removed from a woman aged 32, married thirteen years, sterile. Menstruation began at 12 years, which had since been regular, but scanty. When seen by Dr. Armstrong she was complaining of considerable bearing down pain and retention of urine. A large mass occupied the pelvic cavity; and the uterus was pushed up and out of the pelvis. The patient had had electrical treatment for six weeks without benefit (her weakened condition had not permitted the application of a strong current). The abdomen was opened and the tumor removed. The extra peritoneal method was adopted in the treatment of the pedicle.

Dr. Lapthorn Smith referred to the advantages of the extra-peritoneal method of treating the stump. He believed, however, the ideal operation would be removal of the tumor by abdominal section and vaginal extirpation of the stump.

Dr. Alloway, alluding to the first specimen exhibited by Dr. Armstrong, remarked that in cases of hemorrhage it was well to dilate and examine the cavity of the uterus, as the source of the hemorrhage often proceeded from growths, which, on being removed, improved all the symptoms. With regard to the operation adopted in the removal of the second specimen, he considered the treatment of the pedicle of prime importance. The danger in the use of the present method of constriction by Koeberlé's wire was sloughing above and below the constriction. The returns from this method were good, but not satisfactory. Dr. Alloway approved of the method employed by Dr. Kelly of Baltimore in hystero-myomectomy, an improvement on Schroeder's method of multiple sutures. "The abdomen is incised as usual, the tumor

turned out, and a rubber ligature made to constrict the neck. The uterus is thus removed by V-shaped incisions. The raw surfaces are thus approximated by stout, buried, continuous catgut sutures, and the peritoneal edges by interrupted ones. The peritoneal sutures are left long, so that the stump can be drawn well up. The uterine arteries are then tied on each side by passing a silk ligature through the substance of the cervix, the rubber ligature is removed, and then the peritoneal surface of the stump united to the parietal peritoneum by continuous silk or catgut. No other sutures are applied, but the ligatures uniting the peritoneal edges of the stump are held by artery forceps."

Dr. Wm. Gardner had been very successful with the wire clamp. He believed that the constriction should be as little as possible. Tait always cut the wire on the second or third day, and so limited the amount of downward sloughing. He thought Dr. Kelly's method suited for typical cases of myoma when the cervix only is involved.

Dr. Geo. Armstrong removed the tension from forty-eight to seventy-two hours after the operation.

Radical Cure of Femoral Hernia.—Dr. Kenneth Cameron read the report of this case, which appears in another part of this Journal.

Dr. Mills asked Dr. Cameron his explanation of the nervous symptoms in this case.

Dr. Shepherd allied the nervous symptoms to those of hystero-epilepsy; the disappearance of which was most probably due to the moral effect of the operation.

Dr. Kenneth Cameron, in replying, believed the nervous symptoms present to be those of hysteria, aggravated, possibly, by family troubles.

Compound Comminuted Fracture of the Thigh complicating the Knee-joint.—Dr. James Bell brought before the Society a man, aged 30, who, about three and a half months ago, had been brought to the hospital with a severe fracture of the lower third of the thigh, with extreme laceration of the soft parts. Amputation was deemed advisable, but patient's consent could not be

obtained. Under ether, the wound was thoroughly cleansed; several small, loose fragments of bone removed, and one inch of the bone excised, equal, altogether, to four inches of the shaft of the femur. The articular end was split and the condyles pulled apart; these were brought together and pinned with Macewen's nails for excision of the knee-joint. No bad symptoms occurred. The temperature never rose above 99½°. The patient was discharged within three months and twenty days, with good union and a fair amount of motion in the knee-joint, which Dr. B. believed would be improved by passive motion. There were three and a half inches of shortening.

Dr. Shepherd had seen the patient and had thought amputation necessary. He had never seen a better result from such a severe accident. Thought Dr. Bell should be congratulated on the result.

Cardiac Phenomena in Typhoid Fever.—Dr. McKechnie then read his paper, which has since been published in the January number of this Journal

Dr. James Stewart complimented the writer on a paper so thorough and well prepared. He agreed with the conclusions of Dr. McKechnie as to the origin of the murmurs. Referring to Case I, he did not believe that much stress should be laid on the diagnosis of dilatation by percussion, as it was open to many sources of error. He did not think that mere dilatation was sufficient to account for the murmur in Case I.

Dr. Mills believed that a dilatation could suddenly develop, which he based upon recent investigations on the heart. That this increased dilatation was due to the stimuli acting through the nervous system, on removal of which, the heart returned to its original contour, leaving no physical signs of dilatation.

Dr. McKechnie, in his reply, remarked that the capillary pulse noticed when Case II came under observation disappeared as the heart-walls weakened and reappeared as convalescence advanced.

MONTREAL VETERINARY ASSOCIATION.

Stated Meeting, December 17th, 1890.

DR. M. C. BAKER IN THE CHAIR.

The Chairman exhibited a case where a large sarcomatous tumor was found in the choroid plexus of a horse. The tumor involved the whole of the choroid plexus, forming two large dark-gray masses, completely filling the lateral ventricles and third ventricle. The diameter of each of the masses was about two inches. They were nowhere adherent to the ependyma. On section, the tumor felt gritty and appeared to be of the nature of a psammoma. The veins of Galen showed a similar change, but to a slight extent only. The animal, a carriage mare, aged 10 years, had presented symptoms of blind staggers for several years; the blindness had recently increased. At one time she appeared totally blind, but shortly before death recovered her sight. The head was spasmodically turned towards the right, nearly touching the shoulder. For three days before death had constantly champed her jaws. In trying to destroy her by chloroform, although she inhaled almost pure chloroform vapour for three-quarters of an hour the respiration remained ten per minute, as before, and the pulse became stronger (52 to 56). Finally the throat was cut.

*Adenoma of Mammæ in the Dog.**—DR. J. ROBERTSON, D.V.S., of the U.S. Army Veterinary Department, exhibited specimens of malignant adenomata in the mammary glands of dogs. In the first case, that of a small Scotch terrier bitch, aged, multiple infiltrating nodules were found beneath the skin over the thorax and abdomen. In the second case, a large Newfoundland bitch, there was a single large tumor in a mammary gland from the abdominal region. This was as large as the fist, and showed traces of calcareous change. In the lungs numerous firm, white nodules, granular on section, were seen; each was surrounded by a fibrous capsule, and could readily be shelled out from the adjoining lung tissue. These secondary

* Pathological Laboratory, McGill University.

nodules had no apparent connection with the pulmonary arterioles. Microscopically, the tumors, both primary and secondary, in both cases showed tubular structure, the tubes being lined in most cases by a single layer of cylindrical epithelium.

*Renal Calculus in the Horse.**—Mr. S. Twombly exhibited specimens of renal calculi obtained from the right kidney of a horse in the dissecting-room. A hard mass was felt in the kidney. This proved to be a large calculus weighing 27 ounces (800 gms.) ; two smaller calculi weighing half an ounce each (15 gms.) were also found. The calculi were rough, dark brown on the surface, and, on section, showed irregular consecutive labyrinth-like arrangement of dense, firm, dark greenish-brown rings, alternating with whitish, soft, crumbling, granular areas. Analysis by Dr. Ruttan showed the darker part to consist of oxalate of lime and the whitish granular part of carbonate of lime with considerable traces of phosphate.

Mr. Townsend read a paper on "*Parturient Apoplexy.*" Several cases recorded, in which he had collated the post-mortem records, all agreed in the fact that no gross lesions of the brain was discovered.

*Colloid Goitre from the Neck of a Hen.**—Donald Campbell, D.V.S., of St. Hilaire, exhibited a tumor about the size of a walnut. The growth was smooth, rounded and encapsulated, and consisted of minute, closely-set cysts filled with a colloid substance ; the intervening stroma extended directly from the capsule. Microscopically, in most of these cysts the central cavity was filled with a homogenous colloid mass, the walls being lined with a single layer of small, low, cylindrical epithelial cells arranged on a basement membrane.

* Pathological Laboratory, McGill University.

Selections.

Treatment of Hepatic Colic.—In a recent number of *La Médecine Moderne*, Professor Germain Sée discusses the always interesting and important subject of the treatment of hepatic colic. The obvious primary indication is to promote the expulsion of the gall-stone, and this, Professor Sée urges, should be accomplished by remedies which increase the flow of bile. The sufferings of the patient are, however, usually so intense that we are compelled to consider first the application of measures directed to the relief of pain. Of these, by far the most speedy and effectual is the hypodermic injection of morphine. This usually acts very well, but Prof. Sée warns us that in some cases the patients, after a fit of vomiting, fall into a state of alarming collapse, even when only one centigramme of morphine has been injected. We must also bear in mind that morphine is one of the substances which diminish the biliary secretion. Of antipyrin, Prof. Sée says that "it will only render mediocre services in this matter, and that we should not lose time by prescribing it." Chloral and chloroform have a less certain action than morphine, but possess the advantage of not hindering the secretion of bile. Professor Sée advises that chloral, if used at all, should be given by enema, as it will not be well tolerated by the stomach. He is disposed to believe that both chloral and chloroform may act favorably by relieving spasm and promoting the relaxation of the walls of the bile-duct.

The second and most scientific indication is to increase the biliary secretion. The mere presence of the gall-stone, and the irritation which it excites, have a tendency to augment the flow of bile, but help may be obtained from the use of various medicinal remedies. Of cholagogues, Professor Sée enumerates bile itself, turpentine and its derivatives, terpine, terpinol, benzoic acid, salicylate of soda, and olive oil. He points out that bile is inadmissible, as its employment tends to make the biliary secretion thicker rather than to render it more fluid, as is desirable. Turpentine and its derivatives are comparatively inefficient cholagogues, but are nevertheless of some value. The "Dur-

ande remedy" owed its success to the presence of turpentine. Of two only of the remedies enumerated does Professor Sée hold a high opinion—viz., salicylate of soda and olive oil. The cholagogue action of the former of these, although pointed out by Rutherford, is hardly sufficiently recognized in this country. It seems to increase the entire biliary secretion, but more particularly its fluid elements. According to Professor Sée, it not only acts as a cholagogue, but has also an analgesic effect, which is obviously desirable in the condition under consideration. It is advised that salicylate of soda be given with large quantities of fluid, as this seems to assist its action.

The cholagogue action of olive oil has been a subject of dispute, and was denied by Bidder and Schmidt. The later experiments of Rosenberg, however, seem to show that if the animal experimented upon be kept upon a normal diet, and olive oil be administered, " a considerable augmentation of the biliary secretion, especially of its fluid part, begins in from thirty to forty-five minutes, the maximum increase is obtained from the third to the fifth hour, and there is also a considerable increase of fatty acids which are capable of dissolving cholesterine." Prof. Sée believes that clinical experience proves that the administration of olive oil both promotes the removal of gall-stone and relieves the attendant pain and jaundice. Its *modus operandi* has been the subject of some fanciful theories. Thus it was at one time supposed that the oil actually ascended the duct and acted locally upon the impacted gall-stone. For this idea there was never any adequate foundation, and it must suffice to say that the administration of olive oil tends to increase the flow of bile and to make it more liquid. The chief objection to this line of treatment is that the oil is often badly tolerated, and that even if it be well borne at first, intolerance is quickly excited.

Professor Sée finally discusses the remedies that are contra indicated in an attack of biliary colic. Chief among these are those medicaments which tend to excite strong peristaltic movements of the intestine, as these are apt to be propagated to the bile passages. Hence strong purgatives are injurious. Purgation should only be employed after the crisis is over, and even

then with caution, as it may excite a fresh attack. Nevertheless, it cannot be wholly dispensed with, as it is desirable to clear out the bile that has found its way into the intestine. We should also avoid those substances which diminish the biliary secretion, of which Prof. Sée enumerates the salts of potash, calomel, iron, copper, morphine, atropine, and strychnine.

These recommendations coming from so esteemed a source, and founded upon such ample physiological experiment and clinical trial, will be received with the respect which they deserve. Probably the point which runs most counter to ordinary practice is the advice given in regard to the use of purgatives. At the crisis of the malady, when the duct is contractlng violently and the patient is in extreme agony, no one would dream of giving a purge ; but a little later on, when the pain has been subdued, while the impaction remains and jaundice is deepening, moderate purgation with such an agent as Glauber's salt has often proved the most efficient of all methods of treatment. Turpentine does not seem to justify the hopes that, on theoretical grounds, were raised regarding its value in biliary colic. Salicylate of soda and olive oil are well worth a trial, and Professor Sée's recommendation will ensure their wide employment. Whatever medicinal remedies we select, it seems evident that copious draughts of warm water, to which a little soda has been added, are invariably advantageous, and it is well that so simple a measure should not be overlooked or neglected because of its simplicity. —*London Lancet.*

Pulmonary Consumption. (By Benjamin W. Richardson, M.D., F.R.S., of London, Eng.)—In many parts of provincial England it was once a practice, hardly yet abolished everywhere by the common people, to treat persons affected with consumption of the lungs by making them swallow live snails. The vulgar idea of the *modus operandi* of the measure was, that the snails found their way to the lungs of the patient and ate the black worms which lived on the lungs and caused, by their depredations, the disease. The snail treatment got a great reputation, for which it probably depended on two collateral causes. The persons who were benefited by it were led to seek the remedy

in purer air than they had been accustomed to live in; and in addition to the snail, which did neither good nor ill, they partook freely of new milk and cream, rich foods likely to be important adjuncts to the cure. Of late the idea that pulmonary consumption is a parasitic disease is revived. The lung infested with hosts of a specific bacillus is supposed to be destroyed by them or by the secretion which they eliminate; and the mode of cure is expected to be found in a lymph or poison which shall kill the bacillus without injury to the patient.

At the present moment the general press is filled with reports and anticipations of such a kind that the uninitiated in the mystery of disease are beginning to see an immediate future when phthisis pulmonalis, which next to alcoholic disease stands highest as a cause of mortality, will practically be wiped off the blackboard of death, and one of the most fatal maladies of past ages be known no more. This were indeed a consummation devoutly to be wished. For the success of the mode of treatment attributed to Dr. Koch, but claimed already by some rivals of his school, can be proved by one proof alone, namely, the effect of the practice on the death-rate.

Up to this time pulmonary consumption has had a high, though declining, death-rate, on which no defined line of *curative treatment* has had any obvious effect. The figures which indicate the death-rate will show therefore, from date, the effect of the new mode of treatment. In order to arrive at perfectly correct returns, many details will, however, have to be taken into account. First and foremost, it must be remembered that consumption is now on the decline from sanitary improvements alone. In 1881 the late Sir Edwin Chadwick joined me in making a calculation, by which we estimated the mortality from consumption in England in the year 1880, in order to compare it with the mortality of the disease in England during the year 1847, the space of thirty-three years being marked by moderately advancing sanitation. From that comparison we learned that pulmonary consumption had decreased in the proportion of $3\frac{1}{2}$ per cent. of the deaths from all causes; that is to say, 12.57 persons died from it in 1847 to 9.12 in 1880. During the past ten years the

decrease has been going on at a more rapid rate, although the figures are not yet at command. This must all be taken into account here in estimating the assumed evidence of benefit from new treatment of a specific order.

To some minds it will occur that the proofs ought to come directly from the clinical results. The expectation is fair, yet not altogether without alloy. At first it may be that they will appear even though, in the end, there should be grievous disappointment. We are dealing with hypothesis so far, and hypothesis, leading to practice, invariably carries with it a certain measure of success. Hope is such a flatterer in trials in which hopeful reason is engaged, that, for a time, it misleads the gravest, touching sometimes the pessimistic fraternity itself. The true tests of success will have, in fact, to meet many diversions and obstacles. Those of us who remember the introduction of cod-liver oil into the treatment of consumption will realize all these difficulties. That famous treatment came to us on the highest authority. Moreover, it stood on a plausible theory, and at first cures upon cures were attributed to it. In course of time it turned out that, although the treatment had its value, it was no specific. The cases it was supposed to cure were good simulated cases of bronchial phthisis, not the veritable affection; cases which might have recovered, under favoring circumstances, without medicines, and which advertise the innumerable empirical "cures."

In the test that will have to be applied to the new era, as some call it, every kind of doubt will have to be overcome. We must know whether the proposed new method is applicable to all types of the affection: to alcoholic phthisis, which strikes down the middle-aged, as well as to the encroaching malady which steals on the predisposed young. We must discover whether the predisposed are as favorably influenced as those free of constitutional taint. Is the youth with delicate lung, the pigeon-shaped chest, and the hectic cheek, in whom the physical disease is pronounced, as amenable to the cure as the more favored person who comes under its influence? Granted, for argument's sake, that one attack is cured by the new treatment,

how long will the cure hold good? Will the predisposed person, safely cured, be warranted from a renewed attack if he or she go out into the world, "take cold," and suffer from that localized pneumonia or acute tuberculosis which older observers look upon as the origin, in nine cases out of ten, of the fatal malady?

The specific action of this treatment is claimed to be on tuberculous tissue only. It does not act by killing germs; it can only influence living tuberculous tissue, which tissue it kills, not other healthy or even diseased tissue. It claims to cure pulmonary consumption by destroying the tuberculous material, the *materies morbi* of tubercle,—a retreat back to the old theory of treatment, and dead against the so-called germicide method. But it is also claimed for it that it cures lupus, and therefore we must assume that lupus is tuberculous; in a word, whatever it cures is of tuberculous type—a tremendous leap.

The people appear to be accepting all that is said as absolute proof. To the popular mind, at this moment, tuberculous disease is near its end in this world. A physician who has had forty years of experience on this subject must not be misunderstood if he cries "Wait and see!" before accepting so unqualified a decision. Some remarkable results may take record at first; but what next? We who are accustomed to observe without burning enthusiasm, are forced to remember results which have astonished calculations derived from experiences in the main sound and certain. We see sometimes in practice certain spontaneous cures or recoveries. I have recently seen a young lady patient, whose sister died of phthisis, and who, two years since, was stricken with every indication of the disease—dry crepitation in the left lung, hæmoptysis, wasting, and night sweats,—but who has made so perfect a recovery that if I had not, with my own eyes and ears, recognized the symptoms, I should almost have doubted the diagnosis. For some time in my practice at the Royal Infirmary for Diseases of the Chest I introduced peroxide of hydrogen as a remedy, and with several such startling results I thought at first a specific had been discovered; but time corrected the hope. Three years ago I treated an extreme case of lupus of the face with sodium ethylate; scales

formed on the red ulcerated surface with free exudation of serous fluid, followed by complete recovery. It seemed specific treatment; but in three succeeding cases the same mode of treatment rendered no such effective service, although in one for a time there was the greatest promise. Under this new treatment shall we see similar successes and failures? Once more. We shall require to know in what manner the remedy operates. Is it through the nervous system, or is it by some chemical or chemico-vital action which it exerts in contact, in infinitesimal division, with the tuberculous living substance?

Poisons Produced by Bacteria.—A few weeks ago we referred editorially to some experimental work of Roussy upon the pathology of fever, in which he demonstrated what appears to be a fever-producing albuminoid, which he termed "pyretogenin." We have now to mention the labors of Brieger and Fränkel (*Berl. Klin. Wochensch., Centralblatt für Phyciologie*) upon the toxic substance produced by the diphtheria bacillus of Löffler. Pure cultures of the bacillus were prepared in large quantity in pepton broth with or without the addition of glycerine. Roux and Yersin had previously separated the toxic substance from bouillon cultures and believed that it belonged to the class of enzyms, a conclusion which the writers cannot endorse. They succeeded in obtaining the substance dry, and class it among the albuminoid bodies, the "toxalbumen," as they name them. The cultures were at first passed through a Chamberlain clay filter. The germ free, lemon yellow, clear filtrate proved to be very poisonous to animals, and produced symptoms similar to those caused by inoculation with the bacillus, including the peculiar paralytic phenomena of diphtheria. When heated to 60°C. it lost most of its toxic properties. It resisted acidifying with sulphuric acid, and steaming to 50°C. An examination for ptomaines and volatile bases gave a negative result. It also failed to diffuse through membranes into water or a solution of sodic chloride. It was precipitated by ammonic sulphate and sodic phosphate as well as absolute alcohol, the latter method being the one usually employed. After dialysis and drying *in*

vacuo the substance was obtained as a snow-white, amorphous, granular powder, easily soluble in water, from which it was not thrown down by boiling, sodic sulphate, sodic chloride, magnesic sulphate, plumbic acetate, or by dilute sulphuric acid even when heated. It is precipitated by carbonic acid or other reagents that throw down albuminous bodies. With Million's reagent a red color was produced, as well as the biuret and xanthroprotein reactions. The plane of polarized light was rotated to the left. From these various reactions the writers conclude that this substance is closely related to serum albumen, though the ultimate organic analysis showed a composition closely allied to pepton, with the following percentages: C. 45.35, H. 7.13, N. 16.33, S. 1.39, O. 29.80. This body in a pure state was very poisonous, two and a half milligrams for each kilogram of body weight of the animal experimented with proving fatal, though sometimes only after weeks or months. (This confirms earlier observations by Roux and Yersin.) Very small quantities injected subcutaneously caused abscess and necrosis, and later wasting of the body. The authors believe that this "toxalbumen" is produced from the albumen of the infected part in the ordinary diphtheritic process, and in this connection recall the "ichthyotoxicum" which A. and N. Mosso obtained from the serum of the murex, and the poisonous albuminoids obtained from plants by Kobert and Stillmark. Further experiments were frequently hindered by the fact that cultures lost their virulence and stopped producing the poisonous substances. In cultures that had lost their virulence an albuminoid body was found that could be distinguished from the other by its dark-brown color and non-toxic properties.

It will be seen from the foregoing that great progress has been made in isolating the peculiar toxic substances produced by micro-organisms. It appears now as though it would soon be necessary to admit, as suggested by Vaughan, before the pathogenic character of micro-organism can be said to have been established, that its peculiar toxic product shall have been isolated and studied.—*Jour. Amer. Med. Association.*

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THE CAUSE OF THE FIRST SOUND OF THE HEART.

Up to the present day this subject has been in an unsettled condition. While there has been perfect agreement that the second sound was caused by the tension of the semilunar valves and by this only, some have denied that the auriculo-ventricular valves took any part in the causation of the first sound, and, as in the case of other theories, a so-called convincing demonstration was furnished. Others thought they had proved equally conclusively that the valves were at all events the principal factor; while still others explained the sound by eddies of the blood.

Recently Professor Haycraft has undertaken the investigation of this vexed subject, and has taken broader ground than his predecessors generally. Haycraft and others have extended Helmholtz's view that the sound heard when a skeletal muscle contracts is a resonance note of the auditory meatus. Haycraft emphasizes what must be clear upon a little consideration, that the heart-sounds as heard when listened to over the chest-wall are not the same as when the stethoscope is placed upon the heart itself; nor should this be expected, for what is really heard is the heart-sound greatly modified by the resonance of the chest-walls, the stethoscope, and the auditory meatus of the observer.

It is shown that the first heart-sound as heard with the stethoscope when placed over the organ itself or against the thoracic wall differs in pitch from any muscular sound known; but it does answer pretty well to what might be expected from a valvular sound modified by the resonance of other parts. In fact, Dr. Haycraft thinks he has demonstrated that " the first heart-sound

is an impure musical note, a minor third below the second sound and in the bass clef. It is a valvular sound like the second sound. It is accompanied by resonance tones of the chest, stethoscope and the ear, these tones being produced by the shock of the contracting heart. In addition, it is, of course, possible that there may be concomitant sounds produced by the rushing of the blood and other minor disturbances." We have given this investigator's conclusions in his own language.—(*Journal of Physiology*, vol. xi, p. 494.)

It will be gratifying to physicians to learn that the view to which they have always been most inclined has been strengthened if not positively settled by these recent studies, in which the physiologist has been assisted by two able musicians. It is also noteworthy that broad views on the causation of the heart-sounds have been taught by a Canadian physiologist. Prof. Mills, in his "Animal Physiology" and his later "Comparative Physiology," writes as follows, after referring to the various exclusive views taught: "But, looking at the whole question broadly, is it not unreasonable to explain the sound resulting from such a complex act as the contraction of the heart and what it implies in the light of any single factor? That such narrow and exclusive views should have been propagated even by eminent physiologists should admonish the student to receive with great caution explanations of the working of complex organs based on a single experiment, observation or argument of any kind. The view we recommend the student to adopt, in the light of our present knowledge, is, that the first sound is the result of several causative factors, prominent among which are the sudden tension of the auriculo-ventricular valves and the contraction of the cardiac muscle, not leaving out of the account the possible and probable influence of the blood itself through eddies or otherwise; nor would we ridicule the idea that in some cases, at all events, the sound may be modified in quality and intensity by the shock given to the chest-wall during systole."

It will appear that such views as the above are in harmony with the latest investigations, and even broader; for we do not think the contraction of the heart muscle can be wholly ignored

or, indeed, cast into the shade ; nor must we regard the second sound *as we hear it* as a purely valvular sound ; for in the nature of the case it must be modified by many of the same conditions that affect the first sound. Haycraft's investigations are chiefly valuable on account of their breadth and the importance attached to the valvular element in the first sound.

THE NATURE OF KOCH'S LYMPH.

Prof. Koch has made a partial statement as to the composition of his lymph. From the beginning of the treatment of tuberculous affections with this fluid, its composition has been an open secret. There is nothing in the recent statements of Prof. Koch that will lead any one to be much wiser on the subject than they previously were. The simple statement that the lymph consists of a glycerine extract derived from the pure cultivation of tubercle bacilli does not enable one to have very clear ideas as to the nature of the agent. Prof. Koch says :* "Into the simple extract there naturally passes from the tubercular bacilli, besides the effective substance, all the other matter soluble in 50 per cent. of glycerine, consequently it contains a certain quantity of mineral salts, coloring substances, and other unknown extractive matters. Some of these substances can be removed from it tolerably easily. The effective substance is insoluble in absolute alcohol. It can be precipitated by it, though not, indeed, in a pure condition, but still combined with the other extractive matter. The coloring matter may also be removed, rendering it possible to obtain from the extract a colorless, dry substance containing the effective principle in a much more concentrated form than the original glycerine solution. For application in practice this purification of the glycerine extract offers no advantage, because the substances so eliminated are unessential for the human organism."

Prof. Koch himself appears to have no definite knowledge as to the nature of his lymph.

* Cablegram to Medical Record, January 17, 1891.

CONTINUED REPORT OF KOCH'S TREATMENT OF TUBERCULOSIS AT THE MONTREAL GENERAL HOSPITAL.

Surgical Cases under the care of Drs. Roddick, Shepherd and Bell. Reported by R. E. McKechnie, M.D.

Case I—(*Continued from last Number, page* 557).

Dec. 24th.—1 c.cm., of the 1 per cent. dilution was injected. A very definite reaction followed, the temperature beginning to rise six hours afterwards, and reaching its highest point ($102\frac{3}{5}$ °) in five hours more. The diseased surface became deeply injected and very itchy. The next day several blebs of sero-pus were seen, and towards evening scabbing began.

Dec. 27th.—1-2 c.cm. injected to-day. Six hours afterwards the temperature began to rise, reaching its maximum of $101\frac{1}{5}$ ° in two hours more, accompanied by the usual symptoms of nausea, headache, etc. This was the last injection given up to date, Jan. 23rd, 1891. The temperature reached the normal by 8 A.M. Dec. 28th, and remained between 98 ° and 99 ° till Jan 6th, several times since when it has reached 100 ° without any known cause.

The diseased surface, up to Jan. 6th, had remained covered with scabs, but on this date these came off, leaving red granular surfaces, with small patches of skin, showing a tendency to cover adjacent parts.

On Jan. 9th the diseased surface was of a dull, angry appearance, and quite painful. In a day or so it took on a moderate suppurative action, which has now given place to scabbing, the lupus patch being now extensively covered with thick hard scabs. But beneath these pus still exists.

Case II—(*Continued*)—Received its next injection of $\frac{6}{10}$ c.cm. of the diluted lymph on Dec. 24th. Six hours afterwards the temperature began to go up, accompanied by chilliness, nausea, and headache. It reached $102\frac{4}{5}$ ° in two hours, and its maximum of 103 ° in four hours more. Coincident with the high temperature, an increase in the pus in the urine was again noticed, and a little blood appeared. No local reaction in the testicle was noticed with this injection.

Temperature reached the normal at 12 P.M. the next night, from when till the next injection of $\frac{8}{10}$ c.cm., on Dec, 24th, it remained normal. In this interval no blood appeared in the urine, and the pus diminished. Following this injection the temperature rose to 103 °, accompanied, as usual, by much sickness and considerable prostration. No definite change was noted in the quantity of pus in the urine, nor did the testicle show any reaction following this injection. Temperature did not reach the normal till 10 o'clok the next night.

Jan. 19th.—From Dec. 28th to date no injection was given. Urine was carefully watched and not a trace of blood seen. The pus, also, never reached the quantity observed after some of the injections, and no pain or swelling was noted in the testicle. Patient felt better than before the first injection, and was anxious for the treatment to recommence. He still had frequency of micturition night and day—every fifteen minutes or so. On Jan. 19th $\frac{6}{10}$ c.cm. of the dilution was injected. The temperature rose to a maximum of $102\frac{2}{5}$ °, reaching normal at 12 P.M. the next night. Patient felt all the typical symptoms—

viz., chill, nausea, headache, backache, and pains in the limbs, and was much depressed. Again, coincidently with the high temperature was an increase in the pus in the urine. But no blood appeared. The testicle also got very painful, and swelled about one-third larger.

Jan. 21st.—The deposit of pus is now the lightest it has been since treatment was begun, some specimens showing only a trace. The urine is also improved, the reaction neutral instead of markedly alkaline, and its fœtid character when freshly passed has left. Last night was the best he spent for months, as he slept for several hours consecut.vely, retaining his urine without inconvenience.

Jan. 22nd.—The same improvement is noted in the urine, and he again passed a good night, sleeping two and three hours at a stretch, instead of awaking every fifteen minutes to urinate. He also has gained 4½ lbs. since the beginning of the treatment.

Case III—(*Continued*).—Dec. 24th—An injection 1 c.cm. of the diluted lymph was given. Following this was a very severe constitutional reaction, the temperature reaching as high as 104⅘°, and being accompanied by the usual febrile symptoms.

Locally, glistening points of exudation appeared on the diseased areas, with deeper-seated bluish spots of necrosis, the size of hempseed, and also deep-seated pin-head points of pus. These surfaces became very itchy and their margins surrounded by an inflammatory blush. In two days' time an active superficial suppurative process involved all the facial patches, and inflammatory action was noticed in the patches on the hands. In about a week, scabbing began, which gradually grew in thickness overlying a thin layer of pus.

Jan. 6th.—The scabs began to be detached to-day, leaving red granulating surfaces. The right upper eyelid is now much thickened by an inflammatory process, and small pustules have formed upon it, in parts where there was no suspicion before of tuberculous tissue.

In the course of a few days the scabs all came off, but active suppuration set in over all the surfaces, accompanied by elevation of temperature and the usual febrile symptoms. In fact she was just as sick as though she had had an injection of lymph. This state lasted about a week, giving place to scabbing, with no fever. At present the patient is feeling quite well; but all the diseased surfaces are covered by exceedingly thick, heaped up scabs. Further injections are deferred, until these come off and what the treatment has done been estimated.

Case IV—(*Continued*).—In the case of chronic cystitis, injected for diagnostic purposes, no reaction was obtained with repeated injections. This fact, taken with this other, that he had an existing possible cause of the cystitis in a posterior gonorrhœa, proved that his case was not tuberculous. So treatment was discontinued.

Case V—(*Continued*).—In the case of moderate involvement of the lungs, with the addition of an anal fistula, no complete result was obtained, as patient left hospital to return home, one of his children being at the point of death. With him a slight constitutional reaction was obtained with each injection, but no changes were noticed in his lungs, nor any increase in his cough or sputum. An increase in the discharge from the anal fistula was observed, and the fistula was slowly closing up; but the case is incomplete. With this case, as high as $\frac{8}{10}$ c.cm. of the diluted lymph was injected, at no time causing a severe reaction, although invariably there was some elevation of temperature.

Case VI.—C.D., a girl, aged 4½ years, with a chronic, rather painless, swelling of the left knee. It was diagnosed to be of tuberculous origin, and with the consent of her parents she was put under Koch's treatment. No evidence of tuberculosis elsewhere could be found.

Dec. 24th.—She was injected with $\frac{2}{100}$ c.cm.; or, rather, with $\frac{2}{10}$ c.cm. of the 1 per cent. solution diluted ten times further, giving her thus $\frac{2}{100}$ c.cm. of a cubic millimetre of the pure lymph. This minute dose gave definite reactions—the temperature 101°, accompanied by pain in the back, etc. An important change also took place in the knee, which became hot and very tender.

The injections have been repeated as follows :—

Dec. 28th.—$\frac{3}{10}$ c.cm. of the above $\frac{1}{100}$ dilution.

Dec. 31st.—$\frac{4}{10}$ c.cm. of the same.

Jan. 8th.—$\frac{5}{10}$ c.cm.

Jan. 14th.—$\frac{5}{10}$ c.cm.

Jan. 19th.—$\frac{5}{10}$ c.cm.

In every case there was constitutional reaction, with nausea, headache, etc., and elevation of temperature; and local symptoms, as heat and excessive tenderness of the affected knee. Although the measurement of the knee had been taken before the first injection, it was not measured afterwards to note swelling, but with this exception enlargement of the knee or inflammatory swelling has occurred, after every injection, from ¼-inch increase in circumference after the second injection, to as much as ¾-inch after the fourth. Between the injections the swelling decreases and knee regains its normal size; the tenderness disappears and patient regains her cheerfulness.

Treatment of this case is to be completed by operation, comparison being instituted with a similar case now in the wards which is not receiving the Koch treatment, and which will be operated on at the same time.

Case VII.—W. B., a young man, aged 20. One year ago he was operated on and a chain of tuberculous glands in the left parotid and submaxillary regions dissected out, the wound healing rapidly.

He returned to hospital a few days ago with a small sinus above the left sterno-clavicular articulation. This sinus followed a small abscess which had formed in this region, no cause other than suppuration of a tuberculous gland being made out. In both submaxillary regions, and both axillæ, a few glands from the size of a pea to that of a bean were noted, none of these being tender. No pulmonary involvement was made out.

Jan. 15th.—He was injected with $\frac{1}{10}$ c.cm. of the 1 per cent. solution. A slight rise of temperature followed this, with headache and backache and a feeling of heaviness; but no local manifestations were observed.

Jan. 16th.—Injected $\frac{2}{10}$ c.cm., causing another slight rise of temperature, with more severe headache and backache. Locally, there was a distinct increase in the amount of pus issuing fram the sinus.

Jan. 17th.—Injected $\frac{4}{10}$ c.cm., with just about the same constitutional reaction as the day before, and nothing new locally.

Jan. 20th.—Patient's temperature was quite normal after three days intermission of the treatment. Headache and backache had left and appetite returned. The increased discharge of pus from the sinus was still present. This day he was injected with $\frac{6}{10}$ c.cm., and got a most

characteristic reaction, with chill, increased temperature, headache, pain in back and extremities, and nausea. The temperature reached 101°, remaining at that from 10 P.M. to 4 A.M. Locally, the parts about the sinus got very tender. Pain was also felt among the glands in the right submaxillary region, and in both axillæ, but with the exception of that in the right axilla, the pain complained of was slight. In the right axilla was found a gland, about the size of a marble, larger than any noted there at the first examination. This gland was excessively tender, so much so that he kept his arm from his side to avoid pressure on it.

Temperature practically did not reach normal for two days, when patient had regained his normal feelings. But up to date the gland in the right axilla is still very tender.

Obituary.

JOHN STEWART, M.D.—We regret to have to record the death of Dr. John Stewart, of Kingston, Ont. He was a native of Perthshire, Scotland, and received his professional education in Edinburgh He settled in Kingston upwards of fifty years ago, and has always taken an active part in medicine and politics. It was mainly through his exertions that the Royal College of Physicians and Surgeons of Kingston was founded.

EDWARD BELLAMY, F.R.C.S.—London has lost, through the premature death of Edward Bellamy, another of its prominent surgeons. Mr. Bellamy was, at the time of his death, senior surgeon to Charing Cross Hospital. He was the author of the *Student's Guide to Surgical Anatomy* and the translator into English of *Braun's Topographical Anatomy*.

MR. JOHN MARSHALL, F.R.C.S. ENG., F.R.S., LL.D.—With great regret we record the death of Mr. John Marshall, Emeritus Professor of Surgery, and Consulting Surgeon to University College and Hospital. He was lately President of the Royal College of Surgeons, and for a number of years he represented this body in the General Medical Council. The institution of the conjoint scheme for examinations was mainly obtained through his efforts. He was the author of several works, as the "Outlines of Physiology, Human and Comparative," and a work on anatomy for artists. He was, we believe, the first to introduce into practice the use of certain oleates in the treatment of local inflammation.

Recently his attention was directed towards furthering the scheme for the formation of a teaching university in London. He was, unfortuately, cut off in the prime of his intellectual manhood.

Medical Items.

—Dr. Wesley Mills, Professor of Physiology in McGill University, has been elected Vice-President of the American Society of Naturalists.

—Henry C. Lea, of Philadelphia, has given the sum of $50,000 to the University of Pennsylvania for the erection of an Institute for Hygiene.

—Dr. A. P. Brubaker has been appointed to the chair of Materia Medica and General Therapeutics of Jefferson Medical College, vice Prof. Bartholow, resigned.

—Josephus Hyrtl, formerly Professor of Anatomy in the University of Vienna, was the recipient, on his 80th birthday, of many congratulations from far and near. To the address of the Medical Faculty of the University he replied in a long Latin speech, which is said to contain abundant evidence of the still powerful intellect of the venerable emeritus professor.

—The prospectus of the London Post-Graduate course for the first term of the year 1891 has been issued. The course consists of ninety-six lectures or demonstrations, and comprises work in the more important special hospitals of the metropolis. Among the lecturers we find many of the leading physicians, surgeons, and specialists of London.

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Original Communications.

HEMIATROPHIA LINGUÆ OF EXTRA-CRANIAL ORIGIN.

BY H. S. BIRKETT, M.D.,

Assistant Demonstrator of Anatomy, McGill University; Laryngologist to the Montreal Dispensary.

(*Read before the Canadian Medical Association, at Toronto, September 11th*, 1890.)

This case concerns a young man, W. C. B., aged 23 years, a bank clerk, who, in November 1889, consulted me in reference to a sensation of phlegm dropping from the back of the throat, or, as he called it, "catarrh," from which he had suffered for about one year.

Proceeding to examine the case, I was at once struck, when the patient opened his mouth, with the position of the tongue. It lay on the floor of the mouth, its tip pointing to the left and beyond the mesial line, and not in its normal position, as Gowers holds it to be when the hypoglossal nerve of one side is paralyzed,* (*vide* accompanying drawing, Fig. 1); the right half is observed to be more bulky and stands more prominently in front of the opposite half, which is much retracted and hidden by the bulkiness of the other side, due to the retraction of the genio-hyoglossus muscle of the left side.

Upon the patient protruding his tongue the exactly opposite conditions are to be noticed. (Fig. 2.) The tip deviates at once to the right side and turns beyond the middle line to the right. The right half is noticed to be much smaller: its surface

* Gowers: "Diseases of the Nervous System," 1888. Vol. ii, p. 275.

showing numerous rugæ or folds: its colour quite yellow, whilst that of the left side is almost purple: to the touch, the right half is quite soft and flabby. The special sense of taste (differentiat-

FIG. 1.

† This sketch was made by R. Harris, R.C.A., and is a very accurate representation. I have had the cavity of the mouth also photographed, but owing to the difficulty of illuminating the cavity the details do not come out so distinctly.

ing between sweet and sour, heat and cold) at the posterior third and anterior two-thirds of the tongue and that of ordinary tactile

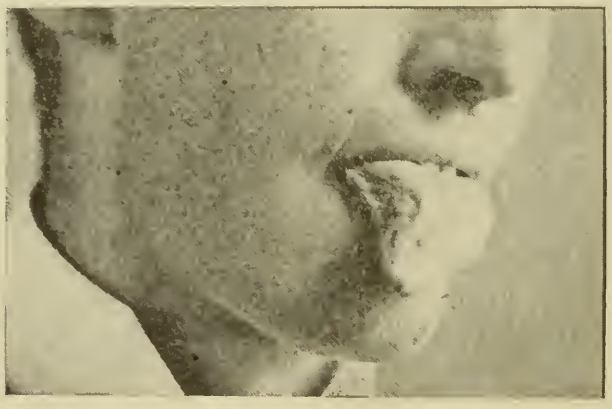

FIG. 2.
[From a photograph by Wm. Notman & Son, Montreal]

sense are quite intact. No fibrillary twitching present. The electrical reaction of the muscles of the tongue was kindly tested by Dr. James Stewart, who found that the reaction of degeneration was present in the right half whilst that of the left was normal.

Directing the patient to phonate "ah" causes the soft palate to deviate to the left in its upward movement. (Fig. 1.)

In the next step of the examination it was ascertained that there was no response to titillating the mucous membrane of the fauces; the soft palate remaining quite passive: even touching the posterior wall of the pharynx caused no reflex movement, and it was an extremely easy matter, with the rhinoscopic mirror *in situ*, to pass a suitably curved probe into the naso-pharynx and touch the mucous membrane covering the roof, posterior and lateral walls of the pharynx, and the Eustachian tubes, without the velum palati being elevated or without the patient having any knowledge of the presence of the probe. Sensation, however, about the posterior extremities of the inferior and middle turbinated bones is intact. Sensation of the lips and buccal mucous membrane is also intact.

Proceeding to the laryngoscopic examination, the image showed that, during quiet respiration, the right vocal cord holds a position midway between that of extreme abduction and adduction, or in the so-called "cadaveric position." Upon the phonation of "ah" or "eh" the left vocal cord swings promptly across the median line to meet its fellow of the opposite side, this latter one at the same time making an imperfect movement of adduction. The effect of these movements is to give the larynx the appearance of being tilted somewhat to the right. Upon deep inspiration the left vocal cord abducts to its full extent, and the right makes but a small excursion in that direction.

The position of the epiglottis is that of midway between the vertical and horizontal, and upon phonating "ah" or "eh" there is an attempt at elevation on the left side. Upon testing the sensibility of the mucous membrane in these regions, I found it diminished all over as far as the level of the epiglottis, but beyond this point the laryngeal probe could not be passed without

the patient saying that he did not feel it. In appearance the mucous membrane of the larynx is normal, that of the naso-pharyngeal space is slightly atrophic, the secretion being dried here and there into small scales.

The pulse at the wrist I found to be 96. Physical examination of the chest was negative in its result.

Upon questioning the patient the following history was obtained :—He had always enjoyed good health until nine years ago, when he was attacked with mumps, and whilst convalescing "caught cold" in the right side of the neck, which resulted in a large and painful swelling making its appearance on the right side just posteriorly to the angle of the lower jaw. About two weeks later the patient noticed that he had some difficulty in speaking and making himself understood, this being especially noticeable in words containing the letter "r." There was no difficulty in eating or swallowing, nor did the food regurgitate through the nostrils. With the onset of this difficulty in speaking the patient noticed that when the tongue was protruded it deviated to the right side. About five years later he noticed that when washing the right side of the neck, if he used any undue pressure over the original site of the swelling it led to the right half of his face becoming flushed and moistened with perspiration, and further, that there was an extreme sense of dryness in the throat, which was of such a degree as to not allow him to speak, this condition lasting for nearly three minutes.

The examination of the eyes was kindly undertaken by Dr. Buller, who reports as follows :—The pupil of the right eye is found to be smaller than that of the left, the measurements being : R, 2.5 mm. ; L, 4 mm. ; both symmetrical in shape ; each reacts to light and with accommodation ; muscular movements normal. A narrowing of the right palpebral fissure is marked. Under atropine the vision, R, $=\frac{6}{6}$ with –1.00 D sph. L, $=\frac{6}{6}$ with –0.25 D sph. Fundi normal.

Upon examining the region where the swelling made its appearance there is found a firm, smooth, immovable infiltration situated close to the anterior border of the right sterno-mastoid muscle, at the level of a line drawn backwards from the angle

of the lower jaw; it extends upwards and downwards from this point for one-quarter of an inch. The skin is freely movable over it. There is a small, irregular superficial cicatrix to be seen in this region, the result, the patient says, "of having had caustics applied to the swelling." Firm pressure upon this infiltrated and thickened area at once produces a redness of the right half of the face and right ear, also a marked degree of right-sided hyperidrosis; concomitantly with these symptoms a dryness of the throat is produced, and to such a degree as to prevent the patient from speaking for a few minutes.

Atrophy of one half of the tongue as a symptom of a central nervous lesion is quite common, but as the effect of one, peripheral in situation, it seems to be rare, and this has led me to search the literature for all recorded cases in which the symptoms were of peripheral origin, and although I have been enabled to collect thirteeen in which hemiatrophy of the tongue was present, yet none of these is exactly parallel to the one now under consideration. Those recorded and their authors are: (1) Paget[1]; (2) Morison[2]; (3) Fairlie Clark[3]; (4) Habershon[3]; (5) Fagge[3]; (6) Hutchinson[4], this author at the same time mentions two others which came under his notice[4]; (9) Romberg[5]; (10) Erb[6]; (11) Ballard[7]; (12) Barlow[8]; (13) Trevelyan[9]. The lesion in the present case is certainly peripheral, the nature of which is doubtless the result of inflammatory changes set up either in or about (probably both) a cervical gland situated at a point just behind the angle of the lower jaw of the right side.

From the symptoms which the patient presents, the lesion has involved the hypoglossal and vagus nerves with its accessory branch, the pharyngeal plexus, and the superior ganglion of the cervical sympathetic—all of the right side, and which, from their

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[1] Trans. Clinical Soc., Vol. ii, p. 238.
[2] Brit. Med. Jour., 1888, p. 75.
[3] Lancet, 1871, p. 815.
[4] Med. Times and Gazette, Vol. i, 1880, p. 57.
[5] "Diseases of the Nervous System," Vol. ii, 1853, p. 302.
[6] Deutsch. Arch. f. Klinische Medicin., Bd. xxxvii, s. 265.
[7] Med. Times and Gazette, Vol. i, 1869, p. 296.
[8] Lancet, 1839, p. 886.
[9] Brain: Spring number, 1890.

anatomical situation, could be involved in a swelling situated where that in the present case is. The symptoms in this case are most striking and extremely interesting, and we may, with advantage, briefly consider each one.

1. *Hemiatrophy.*—Wasting of the muscles of one side of the tongue, tactile and the special sense of taste being intact, all point to support the view held at the present day that the function of the twelfth nerve is purely motor; the function of tactile sense being supplied by a small branch derived from the plexus ganglioformis vagi.

2. *Paralysis of the right half of the soft palate.*—This is due, of course, to the want of action of the levator palati and azygos uvulæ. The nerve supply of these muscles is, even at the present day, *sub judice*, and it is very generally taught at present that the nerve supply to these muscles is from the facial, through the large superficial petrosal nerve, and our clinical teaching is, that in every case of central facial paralysis we ought to look for paralysis of the soft palate, thus regarding the seventh nerve as supplying a motor function to the levator palati and azygos uvulæ muscles; but upon this point we have the valuable opinion of Hughlings Jackson, who says that "it is generally held by physicians that in paralysis of the facial nerve from lesion to its trunk before the giving off of the branch to Meckel's ganglion (the large superficial petrosal) there is some paralysis of the palate; but I have never seen a case of this kind of paralysis from any cause in which the palate was paralysed. In cases even of paralysis of this nerve from disease in the pons Varolii, in which, of course, the injury must have been above the origin of the branch to Meckel's ganglion, the palate seemed to be quite normal. Instances of slight deviation of the uvula are frequently met with in the out-patients' room, and in patients who have no facial paralysis; *but real paralysis of the palate is decidedly a rare thing. If we exclude diphtheria, it is very rare indeed.*"[1] In support of this, I think the case now under consideration lends some weight, for very careful examination of the muscles supplied by the seventh nerve reveals that

[1] London Hospital Reports and Clinical Lectures, 1864.

there is positively no evidence of any of them being in the least implicated. Recent experimental investigations by Beevor and Horsley strongly support the view held many years ago by Hughlings Jackson, that the facial nerve plays no part in supplying the elevating muscles of the soft palate with motor power, and to corroborate this statement I quote the opinion of these investigators: "The idea (*i.e.*, that the levator palati and azygos uvulæ muscles are supplied by the facial nerve through the superficial petrosal nerve) upon which so much stress has been laid is entirely hypothetical, as might have been shown at any time by stimulating the facial nerve in the skull and observing the soft palate. We have found that stimulation of the peripheral end of the divided facial nerve in the internal auditory meatus failed to cause, even with the most powerful currents, the slightest movement of the soft palate, although the face was thrown into violent spasm. We find that the levator palati is supplied entirely by the eleventh nerve. When the peripheral end of the cut nerve was stimulated inside the skull, elevation of the soft palate on the same side was invariably seen. The path by which the fibres from this nerve reach the palate is probably through the upper branch of the pharyngeal plexus."[1]

Fraenkel remarks that in all the cases of paralysis of the accessorius which have come before his notice the soft palate was always involved.[2]

3. *Diminished sensation of the mucous membrane of the buccal and naso-pharynx.*—These parts derive their sensory fibres from branches of the vagus, glosso-pharyngeal nerves, and from the upper cervical ganglion, these forming what is known as the pharyngeal plexus. That the glosso-pharyngeal nerve itself is not involved in the lesion in this case is proven by the fact that the special sense of taste at the posterior third of the tongue is quite intact—presuming, of course, that the view now generally accepted by physiologists that the function of the ninth nerve is, besides being sensory and motor, the nerve of special sense of taste to the posterior part of the tongue. (This view

[1] Brit. Med. Jour., 28th Nov.. 1889.
[2] Berlin. Klin. Wochen., No. 8, s. 150, 1888.

is, however, opposed by Gowers, who holds that the trigeminus alone carries on this function to the whole of the tongue.[1]) To support the statement that the nerve trunk itself is not involved, we find that the patient has not, and never had, any difficulty in swallowing, and recorded cases of unilateral involvement of the glosso-pharyngeal trunk have all been attended with difficult deglutition.

To support the view that the glosso-pharyngeal nerve is the nerve of taste to the posterior part of the tongue, Pope[2] has recently published a case of thrombosis of the vertebral artery pressing on the glosso-pharyngeal nerve and producing unilateral loss of taste at the back of the tongue.

Reference to the accompanying diagram (Fig 3) will show that it is quite possible for a lesion, situated as it is in this case, to press only on the branches of the pharyngeal plexus without involving the trunk of the glosso-pharyngeal nerve and at the same time give rise to the symptoms here present.

4. *Paresis of abduction and adduction of the vocal cord* on the same side as the lesion, with diminished sensation in the lower part of the pharynx; and a somewhat quickened pulse (96–98) suggest the implication of the vagus above the superior aryngeal nerve.

5. The most interesting group of symptoms which we now come to consider embraces (1) *myosis of the right pupil;* (2) pressure over the site of the inflammatory swelling produces (*a*) *flushing of the right side of the face;* (*b*) *hyperidrosis of the same side;* (*c*) *dryness of the throat.*

Such a group of symptoms is, as we know from the experiments of Bernard, produced by the unilateral section of the cervical sympathetic. The oculo-pupillary symptom is in this case permanent, indicating the implication of the function of the sympathetic as to induce a paralysis of the dilator fibres of the iris, leaving thus the action of the third nerve unopposed; but the flushing and hyperidrosis of the same side of the face, and the dryness of the throat, are in this case only transitory, being

[1] Gowers; "Diseases of the Nervous System," Vol. ii, p. 209.
[2] Brit. Med. Jour,, 23rd, Nov., 1889.

brought about by pressure applied to the site of the inflammatory swelling, inducing, I would suggest, (1) a vaso-motor paresis, thus giving rise to the first-named symptom, (2) stimulation of the proper secretory fibres of the sympathetic, calling forth an hyperidrosis, and the pressure, if still continued, involving the salivary secretory fibres of the sympathetic to a degree equal to

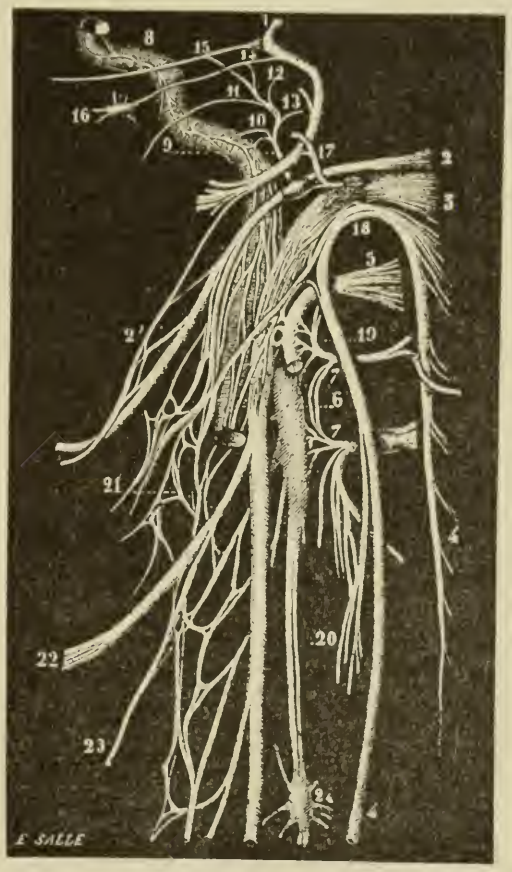

Fig. 3—Quain's Anatomy, p. 591.

1, Facial nerve; 2, glosso-pharyngeal with petrous ganglion represented; 2^1, connection of the digastric branch of the glosso-pharyngeal nerve; 3, pneumo-gastric with both its ganglion represented, 4, spinal accessory; 5, hypoglossal; 6, superior cervical ganglion of the sympathetic; loop of union between the two first cervical nerves; 8, carotid branch of the sympathetic; 9, nerve of Jacobson (tympanic) given off from the petrous ganglion; 10, its filaments to the sympathetic; 11, twig to the Eustachian tube; 12, twig to the fenestra ovalis; 13, twig to the fenestra rotunda; 14, twig of union with the small superficial petrosal; 15, twig of union with the large superficial petrosal; 16, otic ganglion; 17, branch to the jugular fossa giving a filament to the petrous ganglion; 18, union of the spinal accessory with the pneumo-gastric; 19, union of the hypoglossal with the first cervical nerve; 20, union between the sterno-mastoid branch of the spinal accessory and that of the second cervical nerve; 21, pharyngeal plexus; 22, superior laryngeal nerve; 23, external laryngeal; 24, middle cervical ganglion of the sympathetic.

paralysis, for it is found that the saliva is diminished in amount in man in cases of paralysis of the sympathetic nerve.[1]

In lesions of the cervical sympathetic, oculo-pupillary symptoms are more frequently observed than vaso-motor, and this is explained by Eulenberg and Guttman by the view that the oculo-pupillary fibres are more superficial in the ganglia than the vaso-motor,[2] and may not the conditions here present in this case support this view, for it is found that the myosis is persistent, due, doubtless, to the effect of constant pressure by the inflammatory thickening; but the symptoms of flushing, hyperidrosis, and dryness of the throat are only temporary, and induced when greater and deeper pressure is made over the site of the swelling.

Raymond,[3] in a recent article, divides the cases of local sweating into the following groups :—

1st, Those in which there is an alteration in the cerebro-spinal system.

2nd, Those in which the cervical sympathetic or the first thoracic ganglion is affected.

3rd, Those in which the nerves of the face are affected.

4th, Those in which the sweating is reflex.

Thus there are two classes of cases characterized by increased sweating—those in which there are, and those in which there are not, vaso-motor disturbances. The lesion in the former is in the sympathetic of the neck. That the pupil is sometimes contracted and sometimes dilated depends upon the fact that the pupillary and vaso-motor nerves are probably distinct, and one set may be stimulated whilst the other is paralyzed. The author then gives an account of the various chronic inflammatory changes that have been found in the superior cervical ganglion, and concludes that these irritate the sweat secreting nerves. Lastly, he points out that the pupillary changes are permanent whilst the sweat ones are transitory, and in this respect the case now under consideration bears this out, for, as previously noted, the myosis is permanent and the lateral hyperidrosis is only pro-

[1] Landois and Stirling: A Text-book of Human Physiology, third edition, p. 215.

[2] E. Long Fox, "The Influence of the Sympathetic in Disease," 1885.

[3] Arch. de Neurol., Jan. 1888. *Vide* review by White. Brain, Vol. xi, p. 143.

duced by pressure (irritation) upon the inflammatory thickening. Takacs[1] also arrives at the conclusion that sweating is not dependent upon vaso-construction, but upon special nerve action.

Referring one moment to the ocular symptoms, it is found that the patient is myopic to the extent of 1.00 D, R. eye, and 0.25 D, L. eye, under atropine ; and I find a rather remarkable statement in this association, made by E. Long Fox, to the effect that " myopia, the necessary consequence of persistent paralytic myosis, is caused by the presumed direct influence of the sympathetic on the muscles of accommodation "[2] ; but I regard the occurrence of the myopia in this case as being merely a coincidence. In a case I recently examined there is persistent myosis, which has been " so long as could be remembered," due to pressure on the sympathetic by enlarged glands, and the refraction proves the existence of hypermetropia (0.5 D).

In conclusion, I would draw the following deductions from this case :

1. That the hypoglossal is the motor and trophic nerve of the tongue.

2. That the glosso-pharyngeal nerve is concerned in the function of taste.

3. That the branches of the pharyngeal plexus supply the mucous membrane of the naso- and buccal pharynx with sensation.

4. That the motor nerve of the levator palati and azygos uvulæ muscles is probably the accessorius.

5. That the superior ganglion of the cervical sympathetic contains (*a*) dilator nerve fibres to the iris of the same side ; (*b*) vaso-motor ; (*c*) sweat ; (*d*) secretory nerve fibres to the mucous glands of the pharynx.

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[1] Centralblatt f. Nerv. hlkd., 1881 and 3.

[2] " Influence of the Sympathetic in Disease," 1885.

STUDY OF KOCH'S TREATMENT IN BERLIN.*

By Geo. T. Ross, M.D.,
Professor of Physiology, Bishop's College, Montreal.

Gentlemen,—The subject of my report indicates that the work referred to was carried out in the chief centre where the lymph cure is being tested, but as the field in London is secondary only to Berlin in this respect, I will also venture to give a few facts concerning the work done in the English capital.

Speaking generally, I think it may be safely said that the evidence furnished us throughout Europe up to the present time regarding the Koch remedy ranges all the way between what is contradictory and conflicting to the point where the results are both brilliant and surprising. The exact result of a dose given in any case cannot be accurately foreseen, and one must be prepared for all kinds of vagaries while watching the phenomenon called reaction. Unsuspected general tubercular deposits or idiosyncrasy may develop a dangerous condition of collapse after a minimum dose of one or two milligrams, while a large dose may not at once manifest its effect, but even when cautiously proceeding a startling condition of things may develop. In my experience, however, these unpleasant surprises have not occurred with any frequency where the precaution was taken to permit normal temperature to be resumed before repeating the dose, a rule which Koch himself emphasizes. As you all know, the temperature after injection varies greatly, and it is important to remember that the curative process may proceed in spite of these variations and during them. I have seen good results following injections which in some cases caused hyperpyrexia and in other cases as much as two degrees subnormal temperature. Be it one extreme or the other, anything like accumulative effect is avoided by waiting until the normal point is again reached; yet throughout its administration there is no remedy in our hands to-day which we require to watch so closely in its action as this one, owing to our limited knowledge of its power. Its cardiac toxic effect is the consideration surmounting all others in im-

* Read before the Medico-Chirurgical Society of Montreal.

portance. Any one who neglects carefully watching the action of the heart risks the patient's life. Then we have sometimes in severe reaction a pulse of 160–200 per minute, cerebral disturbance, cyanosis, collapse, and even during the earlier experiments sometimes a fatal termination. The other general disturbances of minor importance are almost beyond reckoning, and to enumerate them would be tedious; suffice it to say that any system in the body may develop evidence of the lymph's effect upon it. Two months ago renal disturbance was thought to be a frequent complication in this treatment, but my experience has shown such to be a comparatively infrequent complication. In the hundreds of cases which it was my privilege to study, and where the condition of the urine was faithfully watched, a few instances of a cloudiness in the excretion was occasionally produced, but only in one case did I see a serious quantity of albumen passed, amounting to about 20 per cent. This condition passed off completely in three days, making it evident that the trouble arose from congestion of the kidneys during reaction and not from any lighting up of tubercular deposits in those organs, as it was feared. Bearing on this point, I might quote the opinion of Sir Morrel Mackenzie, who told me he was convinced, from what he had seen, that we need not fear renal trouble in this connection.

In *Lupus*, the good effect of the remedy is now so well established that little reference to it is required from me. Six weeks ago, however, from what I saw in London of the action of the lymph on diseased tissue of this nature, I felt persuaded that if the most skeptical, prejudiced and biassed mind, in watching the progress of lupus towards cure under this remedy, was not convinced of the brilliant, almost immediate results, then there exists nothing in the healing art that can ever be convincing to such a mind. The question as to subsequent recurrence of the disease is not what I allude to here, but the positive and rapid cure, causing, in the space of a few weeks, a putrid, ulcerating mass of rottenness to become a smooth, cicatricial surface, without a nodule of ulceration remaining. This much is conceded for the remedy, per force, because the results have been so quickly

attained in relation to parts that were readily observed during the progress of the case that cavil is now beyond reach. The only question here is one of subsequent recurrence, and that question the gratified patients who have been cured are quite willing to leave the future to deal with, their present condition being such a pleasing contrast to that which afflicted them for many years past. The worst case of this disease which had been treated by Koch's remedy either in London or Berlin is the only one that I will specially refer to, and is as follows :—

Charité Hospital, Berlin.—Jäger, aged 28, a man of good physique and good family history, suffered from lupus for many years. On entering hospital the diseased tissue extended over both cheeks as high as malar bones and outwards some two inches beyond angles of each jaw, downwards over lips, chin and neck to pomum Adami, nose eaten away to bony septum, and lupoid tissue extending upward over remaining nasal structure to lower border of frontal bone,—in fact, the face presented a suppurating, ulcerating, putrid mass, emitting such a horrible odor as to made his presence in the ward unsupportable had it not been for the aid of antiseptics and deodorants. Treatment by Koch's lymph alone was begun on 9th December last by injection of one centigram. Reaction followed in five hours, with temperature of 103°, pulse 112. Three days after, on repeating the same dose, about similar results followed, and this happened until the fifth dose was given, when, instead of fever following, a subnormal temperature was caused. By increasing the dose one-half a normal temperature was reached ; again, on giving double original dose, viz., 0.02, temperature became subnormal. This was on 23rd December, and the Christmas holidays interfering, the patient received no further treatment until the 29th December, when 0.03 c.c. were given without reaction. At this time, in spite of the intermission of about a week in treatment, the appearance of this patient was so remarkable in contrast to his condition on entering that one could not be otherwise than delighted at the wonderfully good effect produced. The last time I saw and talked with this man only a number of isolated nodules of ulceration remained, and I know from experience in

less aggravated cases that a week or two more would leave his face smooth and practically healed.

In the same ward of the "Charité" another case was quite cured where the nose was half gone, while the face, hand and arm had been badly affected, there remaining only the smooth, dark blue cicatricial surface where formerly, for twelve years, a distressing condition existed. In private talks with these patients, they assured me that for the chance of attaining such good results they would be willing to undergo the worst phases of reaction and all its attending unpleasantness.

Are not these results that call forth one's admiration? Suppose we admit that a recurrence of this disease is possible, even probable, and up to the present time no evidence is afforded to support such a conclusion, look at these patients to-day who have undergone years of misery of the most trying kind both to themselves and relatives. They would give their right hands for such relief as has already been afforded, and I would only add, briefly, that my conviction is, the relief afforded by this remedy, even in reference to the disease of lupus alone, is a God-send to humanity and worthy the highest praise we can bestow upon it. Minor cases of lupus which I watched at King's College Hospital, Sir Morrell Mackenzie's Hospital, and elsewhere, cases affecting the larynx, face and limbs are so benefited, that such men as Sir Joseph Lister, the specialists Lennox Browne and Mackenzie, Mr. Watson Cheyne and others, all expressed themselves to me as having the greatest confidence in the treatment.

The scope of this paper will not permit me to furnish one fractional part of the evidence collected in proof of the efficacy of the lymph, while a comparatively short paper would contain most of the evidence against its use. That death has been directly due to the use of the lymph is beyond question, but in the half dozen autopsies I witnessed after Koch's treatment the post-mortem evidence was overwhelming that in such cases it was worse than useless to apply this or any other remedy in the hope of cure, or even improvement.

In *Tuberculosis of the Lungs*, it is already established that far from being applicable to every case of this disease, it is

decidedly injurious and hastens the end in greatly advanced cases with large cavities; on the other hand, both London and Berlin afford us abundant proof that in selected cases it is remarkably beneficial. My notes show that in most instances where moist râles and other evidences of tubercular deposit existed in both apices, extending over both back and front of chest, with the usual accompanying signs of progressing tubercular disease, such as cough, expectoration, night sweating, emaciation, loss of appetite, dull percussion, etc., these conditions have been changed remarkably, and in a shorter time than any other remedy was ever known to afford. This change meant, briefly, a decreased expectoration and lessened cough, cessation of sweating, gain of weight and good appetite. A clearing up of the moist râles with clear percussion and, instead of bronchial breathing, a more vesicular murmur. Although an increase of the bacilli occurs after the first injections, this passes off in most instances as the case progress, and few are discoverable later; but this course as regards bacilli can by no means be looked upon as typical, indeed the treatment is yet too experimental to establish what may be called typical action of the remedy.

One case I saw in Charité Hospital, Berlin, where phthisis pulmonalis developed after typhoid fever, and patient gained, when this treatment was begun, just 13 lbs. in two weeks. This was looked upon as phenomenal, it is true, but he continued to gain steadily, though more slowly, in the following weeks during which I saw him. His cough had quite left him, and although looking pale and anæmic, he assured me he felt about as well as ever, and hoped soon to go home.

At a recent meeting of the Berlin Medical Society, Dr. Fraenkel read records of the encouraging results in general improvement, a general diminution of dulness over the infiltrated areas, and in many cases a prospect of cure by Koch's remedy. Up to the time I left Berlin no case had yet been discharged as cured from the hospitals. I had the good fortune, however, to see one case of a youth, aged 18, who was treated in Dr. Cornet's private klinik, and who had, the day I saw him, received his last injection previous to being sent home. The lymph had ceased

to affect him, although at first the reactions were marked. He said that his trouble began three years previously, and although his symptoms were not of an aggravated kind, his case was quite pronounced. He improved rapidly under the treatment, so that eight weeks later he was allowed to return home, with instructions to report in a month for another test injection. In his case I could not conveniently ascertain the action of the bacilli under treatment. Weight, strength and appetite were restored satisfactorily in every way. Cases of incipient phthisis, it is considered, take five to six weeks, and bad cases three to four months for satisfactory treatment. On the other hand, a young woman in Dr. Krause's clinic told me that she was worse after six weeks of Koch's remedy, and intended going home next day. A young man in a different ward of the same clinic expressed himself in the same terms. These were both cases with good-sized cavities, and the attending physicians were rather hopeless regarding them. Another case in London said that he never had night-sweats until beginning this treatment, and blamed it accordingly. Still another had such severe reaction that she feared death and would not submit to the injections again for any consideration; and so from time to time one would meet occasional cases which discouraged treatment, but these were certainly the small minority. In advanced cases no good can be looked for with any confidence. Distinct contra-indications for the Koch treatment are great loss of strength, amyloid or other degeneration of tissue, albumen, urea and cardiac complications of a serious nature. Koch does not regard slight heart disease as an obstacle, the pulse being increased long before the rise of temperature. I have seen hæmoptysis caused by the lymph in several instances, but after waiting three or four days and no further indications, treatment was resumed without bad effect.

About the beginning of last December the results of lung treatment by the lymph at both City of London Hospital for Consumption, under Dr. Heron, and at Brompton Consumption Hospital, under Dr. Theo. Williams, were most encouraging, as far as they had proceeded, and this state of things I found fully

confirmed in returning through London abont a month later; nothing had occurred to change the views of these gentlemen respecting the great efficacy of the lymph. In laryngeal phthisis under Sir Morrel Mackenzie, and in cases of local tuberculosis under Mr. Watson Cheyne and Sir Joseph Lister at King's College Hospital, further experience has not altered, but confirmed, the confidence these gentlemen have in the treatment even in the face of occasional failures.

On 21st December last Dr. Cornil of Paris gave his dictum decidedly against the use of Koch's lymph, and a copy of his statements was published in the London *Lancet* of 3rd January. He said what is conceded elsewhere in regard to advanced phthisis with large cavities, that this remedy is worse than useless, and also that it is not applicable to acute or pneumonic phthisis, finishing by the statement that in incipient chronic tubercle its effect was doubtful. In passing through Paris recently I found this observer had greatly modified his views, and that the French physicians, including M. Huchard, who have had opportunities of testing the lymph, were now giving evidence much more in accord with records furnished elsewhere. As against this we have a telegram published from Paris last evening that Prof. Grasset had a patient die while under the Koch remedy whose case was not advanced tuberculosis. These are the meagre details of the case, and they are published broadcast while the scores of successful cases are only recorded in medical journals. Yet even in this case we might, if we knew all, have one parallel with the girl at Innsbrück, where, although it was believed tubercular disease was little advanced, the autopsy revealed a general disseminated tuberculosis. Again, the case reported from Buda-pesth of advanced phthisis complicated with diabetes mellitus, could not have been reasonably expected to end otherwise than it did. In these cases the fatal result has been due to the absorption of the products of the necrotic process set up by the lymph. On the 2nd January telegraphic reports from Madrid gave good results in treatment of leprosy with the lymph, and since that time we know that in New York some good work has been done in connection with this disease.

On Jan. 2nd Mr. Watson Cheynne had been summoned to St. Petersburg to treat some prominent cases of leprosy with lymph. In Hamburg the treatment of tubercle was carried on effectively at the large general hospital there, and the results were most encouraging. All conditions and stages of phthisis pulmonalis were treated, consequently ill effects presented themselves as well as good. In cases that were not too far advanced the patients showed unmistakable signs of benefit. At first the effect of reaction was loss in weight and strength, but that was very temporary, for a permanent gain in strength and flesh generally followed, with a relish and desire for food previously unknown. Owing to the fact that the good effects of this remedy are mostly confined to cases of the early stages of consumption, and to the fact that many cases in this condition, when removed from the hardships of their everyday life to where they are warmly housed and abundantly fed with what is wholesome and nourishing, frequently improve, it has been asserted that the effect of Koch's lymph is really secondary to the effect of the improved hygienic surroundings. Against that assertion we have emphatic statements from most of the leading medical men of our generation in praise of the remedy, and these men are well known to give stint praise where it is not merited. I think it may safely be said that this remedy, to be successfully handled, calls for a more accurate estimate of the patient's physical condition than any other known means of cure, and several days careful observation of the patient's condition are a necessary preliminary to treatment; a rule that is without exception. Then the continuance of this strict observation during reaction is as called for as the treatment itself, and this work must be carried out by competent trained assistants in order that every detail in the progress of the case may be noted. When, as in this treatment, the temperature has to be taken every two hours, it would be unwise to trust to the assistance of a patient's relatives as a rule.

In *Local Tuberculosis*, the results are regarded as generally beneficial. As in lung tubercle, so it is here foolish to look for markedly good results in every case treated. We are fairly

well able now, however, to indicate from experience thus far afforded what kind of cases are most amenable to this treatment. In cases of chronic enlargements of joints, I have seen, after the subsidence of reaction, a decided diminution of the morbid material, but surgery must still hold its own in such cases. In chronic enlarged strumous glands remarkably good results have been produced after two weeks treatment. One case alone in Mr. Watson Cheynne's clinic at King's College Hospital would almost appear to establish the potency of the remedy in an unmistakable way. Two injections entirely cured several chronic suppurating sinuses in the hand and arm, besides reducing by half a mass of suppurating glands with burrowing sinuses which extended in a semi-circle from ear to ear. In Paddington Green Hospital for Children, the dissolution of swollen glands, healing of ulcers, decreased discharge and healing of sinuses, all testified to the efficacy of the lymph. Again, a case of chronic tubercular diarrhœa in the Charité Hospital, which had resisted every remedy they had given, yielded in about a week to the lymph. No other remedy being employed while the lymph was given, it was at least reasonable to suppose this agent effected the cure. The case progressed well subsequently under the same treatment.

In *Laryngeal Tuberculosis*, I saw some excellent results without the evil effects that were dreaded so much at first when it was known the reactions were accompanied by various œdematous conditions. In Krause's clinic some interesting throat cases were treated with good effect. One instance in this clinic where both laryngeal and lung tubercle were well developed I would like to bring to your notice briefly. Wende, aged 38, fair complexion, medium height, good family history, merchant, had symptoms of lung and throat trouble two years. On entering hospital the records show that he had severe cough with purulent sputum, smothered breathing, moist râles, and dull percussion extending from apices of both lungs as far as fourth intercostal space ; on left side, a subclavicular cavity was found. Body showed general emaciation, and night-sweating was troublesome. Voice very hoarse, and a chronic laryngitis existed, with infiltration of left vocal cord. Presence of bacilli in consider-

able amount demonstrated. Patient given full diet and put on lymph treatment by injection of 0.001 c.c. This small dose caused temperature 103°, pulse 112, and respirations 40. This temperature subsided, but rose next day to 102°, again becoming normal the following day. Next injection, given 48 hours after the first, was increased to 0.0014 c.c., or an increase of about half a milligram. This gave sharp reaction, temperature rising to 104°F. in about six hours, then dropping to normal, and next day rising to 103° and subsiding. The doses were gradually increased until, in six weeks, he was receiving 0.075 c.c. Results: night-sweats arrested, laryngitis cured, improved percussion, diminished râles, patient claims to be greatly better and as cheerful as possible regarding his condition, cough much less, formerly could not lie on right side, now comfortable in any position. The hoarseness was still marked, but the generally improved condition of this patient was not only most gratifying to himself but satisfactory to the physician, for the case gave promise of best results even in the presence of fairly well advanced disease. In taking this patient's private address he promised to write me in a couple of months regarding his health, for he was quite sanguine that about three months of the same treatment would enable him to work again and return home.

At the Throat Hospital, Golden Square, London, some excellent work was done in lupus of larynx and laryngeal phthisis. The case of a boy was interesting, who had entered with dangerous œdema resulting from lupus of larynx. Here tracheotomy was performed and Koch treatment begun. In four days the intensely red infiltrated condition subsided without any sloughing; the boy could swallow and breathe comfortably, and in some eight days wanted very much to go home, believing himself quite well enough to be looked after amongst his friends. Another severe case of lupus affecting both throat, lips and nose showed great improvement, while another of laryngeal and lung tubercle showed great benefit after two injections. Here a marked hypertrophy of right ventricular band had almost disappeared, although some swelling remained. Later on the moist rales in lung were appreciably lessening and an encouraging

improvement generally manifest, but I feel that this summary of my notes has already occupied too much time, and I will close with a few facts regarding the *diagnostic value* of the lymph.

Although the remedy has been shown to be most insidious in attaching itself to tubercular tissue generally, this quality has been proved by no means invariable, for records are given where no reaction took place in the presence of undoubted pulmonary tubercle after the injection of 1 to 10 milligrams. Again, fatal result has followed in some few instances from a minimum dose where the case was supposed to be incipient phthisis, but where the autopsy revealed unsuspected deep-seated cavities. Of the half-dozen post-mortems witnessed by me in Europe after this treatment, in every case the condition of the lungs was found to be such as would not warrant us giving the remedy in our present knowledge of its effects. In every case the tissues were either permeated generally by large tubercular deposits, some caseous, others softened into areas of pus, or the presence of cavities, large and small, have determined the fatal issue. Another factor very evident was the frequency in these cases of great emaciation and debility, such as would deter a cautious man from applying so powerful a remedy in even the smallest doses. The intravenous method of injecting the lymph, as tried by Barcelli in Italy, and which produced reaction when the hypodermic method failed, has not been done to any extent in Berlin, London or Paris. As bearing on diagnostic value, I will furnish the outline of a case treated in Berlin. It was believed by the hospital surgeons to be cancer of soft palate, pharynx and tonsils. An injection was given experimentally with no expectation of reaction, but, contrary to the accepted views, a severe reaction followed. The affected parts within sight became swollen and quite red from congestion. In two days a sloughing condition presented itself over same surface, which sloughs were in time expectorated, leaving red, glazed patches behind, and in two weeks the throat was practically healed, while patient's health generally was greatly restored. Another surprising incident occurred under Dr. Heron at Victoria Park Hospital. A. B., aged 18, thought to be a case of anæmia and non-tuber-

cular, received full injections—viz., 0.01 c.c.—to compare results with tubercular patients. To the doctor's surprise she reacted to a temperature of 101°, with swelling and pain in both knee joints. This temperature fell next day to 97°, then rose to normal. The second injection given was 0.005 c.c. instead of 10 milligrams, and this was followed by a temperature of 103° in 16¾ hours, with no pain or swelling of joints. Without further detail, suffice it to say that this patient was treated until reaction was nil in response to gradually increasing doses. Dr. Heron was quite satisfied that this was a case of tubercular affection which in time would have developed itself. In a non-tubercular person the dose of a centigram will cause a passing effect only; in this case no suspicion of tubercle could be based on any existing symptoms.

If I had dared encroach further on the Society's time, I would have given in detail the latest phase of the Koch treatment as carried out at the hospital in Moabit, a suburb of Berlin. I refer to a few cases where resection of the ribs has been done to permit of cleansing out lung cavities, cauterizing these cavities, and local application of lymph thereto. Prof. Sonnenburg, who has the surgical wards in the Moabit hospitals, gives an elaborate account of these operations in the last *Deutsche Medicinische Wochenschrift* and their results, which are certainly satisfactory up to the present time. For the technique of the operation and the details of the work, I would refer those interested to that journal. The surgical skill, combined with the precision in medical diagnosis demanded by such operations, precludes procedure of this kind outside of large hospital centres, but the Koch treatment outside of this phase of it can be creditably undertaken by the general practitioner who will assume the labor of clinical experience which alone can qualify him.

Gentlemen, I feel that an apology is due for the length of this paper. My only excuse is the futility of attempting, even at this length, a fair synopsis of the study, during a couple of months, on this interesting subject in so great a field as that of Europe.

SPINAL SYPHILIS, WITH A REPORT OF THREE CASES.*

By F. G. Finley, M.D.,
Assistant Demonstrator of Anatomy, McGill University.

Spinal Syphilis has been the subject of far less attention than the cerebral form. This may be accounted for by its much greater rarity, a fact admitted by all. Although a fairly large number of cases are on record, the numerous and exhaustive papers and monographs which have appeared in recent years on the cerebral form do not as yet exist for the spinal. An early recognition of the affection in question is, however, of hardly less importance than the same disease in the brain, as it is only in cases in which treatment is commenced before actual destruction of the nerve elements has taken place that we can hope to completely remove the disease. As the progress of syphilomata is sometimes exceedingly rapid, it not unfrequently happens that patients, especially among the lower classes, postpone their visit to a physician until after irrevocable damage has been done.

The effects of syphilis on the spine are numerous and far-reaching. In some way or other this disease predisposes to slowly progressive sclerosing changes in the nerve centres. The best known example of this is locomotor ataxia, in which probably over 60 per cent. of cases owe their origin to syphilis. A considerable number of cases of acute ascending paralysis have been observed in syphilitic subjects, and in some the symptoms have been said to pass off under suitable treatment. So far no explanation has been offered of the relation between these diseases. Myelitis in a subacute or chronic form is another affliction between which and syphilis an obscure connection exists, but at present we are only aware of the fact that many cases exist in sufferers from the latter disease. Arterial changes, more especially thickening of the intima and obstruction to the passage of blood, have been found in spinal as well as cerebral syphilis, and it has been suggested that softening may thus occur from defective vascular supply and so simulate myelitis. The facts,

* Read before the Canadian Medical Association.

however, that softening is rare in cases of non-syphilitic arteritis, and that inflammatory changes undoubtedly occur, rather militate against this view.

In addition to these indirect results of the syphilitic poison, symptoms are undoubtedly due to gummata and their attending inflammation. Although a considerable number of instances of syphilitic paraplegia are recorded, there are as yet but few post-mortem examinations, so that our knowledge of this subject is somewhat fragmentary.

Gummatous formations usually occur in the membranes, and the attending inflammation infiltrates the surrounding structures, causing adhesions of the membranes to each other and to the cord, and not unfrequently destroying and displacing its elements. Heuban also describes gummata of the membranes appearing as minute nodules resembling miliary tubercle. The victims of hereditary syphilis are seldom attacked by disease of the nerve centres, but a few instances are on record in which the spinal meninges have been affected. Siemerling (*Arch. v. Psychiatrie*, 1888) reports a case in which the child of syphilitic parents was attacked by hemiplegia and aphasia at the age of five; two years later optic atrophy consecutive to neuritis came on, and ataxia of the limbs. At the age of 13, death occurred, preceded by vomiting and headache. At the autopsy, in addition to cerebral lesions, the spinal pia mater was covered with gummata, which encroached on and destroyed the fibres of the cord, especially the posterior columns.

From this brief sketch of the anatomical conditions it may be surmised that the symptoms are apt to be extremely variable. There is, indeed, nothing characteristic in the symptoms, and, as Gowers well puts it, "there is no combination of symptoms produced by syphilis that are not also produced by other disease." In the diagnosis, a history or evidence of syphilis must be carefully looked for, and even if absent, it is necessary to remember Broadbent's caution that the nervous system is frequently attacked by syphilis in those in whom evidence of the disease is lacking. In any case in which there is any reason to suspect syphilis, it is an imperative duty to use anti-syphilitic remedies

without delay; and even if the disease is not specific, the use of mercury and of iodide of potassium can do no harm.

The prognosis is not always favorable even in cases of gum mata, whilst myelitis and tabes are not affected by antisyphilitic remedies. It must be remembered that gummata are apt to rapidly cause destruction of the nerve tissue, and in such cases permanent damage will result. Then, again, there seems to be cases in which specific remedies lose their effect.

In treatment, the cases which have come under my observation have invariably had mercurial inunctions, with iodide of potassium internally in doses of from ten to thirty grains or more three times daily. Although mercury may not always be necessary, it seems by far the best practice to administer it, as it is admitted that the iodide alone may fail. Dr. Gowers recommends the iodide to be given for not longer than six to ten weeks, stating that it can do all it is capable of in that time, and that a longer continuance may be harmful or render the subject insusceptible to its influence.

Three cases which have come under my observation may be quoted to illustrate some of the phases of syphilitic spinal disease.

Case I.—Mrs. M., aged 32, came to the Montreal Dispensary in June, 1888, complaining of headache, double vision, and weakness. The woman had been married for eight years to a dissolute husband, and had had two children and one miscarriage. Three years previously she had a cutaneous eruption, and last summer sores on the face and leg.

Examination.—The patient is anæmic and thin. There are pigmented scars on the knees and toward the lower end of the left leg, which were looked upon as undoubtedly syphilitic. There were also five or six round and non-pigmented scars on the face. She was ordered ten grains of iodide of potassium, and returned in a month with symptoms relieved, and was then ordered to take a mixture of bichloride of mercury and iodide for some months. This, however, she failed to do.

This woman was next seen in January, 1889, when she returned with a marked ataxic gait. On enquiry, she stated that

two months previously she noticed a sensation of pins and needles with weakness in the legs, also a girdle sensation round the waist and pains in front of knees, but nothing corresponding to the lightning pains of locomotor ataxia. The gait was markedly ataxic, the lower limbs being raised high from the ground and brought down violently on the heels, and she was unable to stand with the eyes closed. There was notable paresis of the lower extremities and increased knee-jerk, but no ankle clonus. Numerous patches of anæsthesia were present on the trunk, as high as the third or fourth rib, into which pins could be run without evoking any response. Touch and the sensation of heat and cold were here also lost. At the level of the girdle sensation there was a complete band of anæsthesia. Sensation in the legs was normal. The urine occasionally was passed involuntarily. The patient continued to attend for two other weeks, but as there was no improvement with specific treatment, and as it was ascertained that she was not taking her remedies regularly, she was sent into hospital. Under the influence of mercurial inunctions and iodide of potassium the ataxia rapidly disappeared, strength returned to the legs, and sensation became normal, with the exception of a girdle sensation round the waist. She left the hospital May 7, and was afterwards able to follow her employment as a washerwoman.

In this case the evidence of syphilis is placed beyond a doubt by the scars, cachectic appearance, and the rapid action of antisyphilitic remedies. The girdle sensation and anæsthetic zone point to a lesion, probably a gumma, in the lower dorsal region. It is known that ataxia may result from disease in the course of the sensory afferent nerves, as in some cases of peripheral neuritis, or from disease of the posterior columns of the cord. Judging from the absence of severe pains in the course of the nerves, it is reasonable to suppose that the posterior columns of the cord were themselves involved, and the occasional involuntary passage of urine is also in favor of this view. The increased knee-jerks and paresis denote interference in the motor treat above the lumbar region, and both these symptoms serve to distinguish the case from one of locomotor ataxia.

Case II.—A. A., an Italian, aged 23, a moulder by trade, was first seen July 11th, 1890, and then complained of general weakness, especially in the back and legs, and of severe pains in the knees and elbows. These symptoms had only been noticed for two weeks, and only became well marked a week previously. Three years previously the man had a sore on the penis, the scar of which still remains, and this was followed by sore throat and alopecia. A medical man whom he consulted in Italy told him that he could not marry for three years, so that his disease was evidently syphilitic.

Examination.—Patient is well-nourished. He complains of severe pains in the small of the back, the knees, and elbows, and there is a girdle sensation about the level of the umbilicus. These pains are somewhat increased at night. Marked paresis of all four limbs, especially the lower, and involving all the groups of muscles. The gait is normal; there is no ataxia. The knee-jerks are increased, but there is no ankle clonus. The superficial reflexes are absent, except the cremaster and the left abdominal, which are diminished. There is slight tenderness on percussion of the lumbar spines, but no rigidity of the spinal muscles. Anæsthesia to touch, and pain on the greater part of the trunk below the umbilicus and over the greater part of the thighs. Sensation in the legs is diminished, but the patient cannot bear a pin prick, as he does above. He was ordered mercurial inunctions, and used about a drachm daily; in ten days the pains had almost completely left. On Aug. 16th the arms were stronger, but the legs remain weak. Sensation in thighs and trunk has returned, and there are small areas of hyperæsthesia, also a zone of anæsthesia around the umbilicus. The superficial reflexes have returned. Was ordered iodide of potassium from the first, but has been taking it very irregularly in doses of from ten to thirty grains three times daily.

The rapid onset of the symptoms are in favor of an inflammatory process, and occurring in a syphilitic subject, there is every reason to believe that they bear the relation of cause and effect. From the symptoms attacking both arms and legs, a considerable area of the cord must be involved, and, according

to Gowers, myelitis is more likely to be present than pachymengitis when both upper and lower extremities are affected. This point is not without value in the prognosis, as myelitis occurring in syphilitic subjects is not materially influenced by antisyphilitic remedies, and in this case it is noteworthy that there has been no material improvement in the strength of the legs. It is possible that there was also a development of specific inflammatory material which was removed by mercury, and so accounting for the disappearance of anæsthesia and of pain under treatment.

I am indebted to Dr. R. L. MacDonnell for permission to use the notes of the following case :—

Case III. *Syphilis*, *Myelitis*, *Hemiplegia.*—A book-keeper, aged 34, was admitted to the Montreal General Hospital, Feb. 4th, 1890, for pain in the head and dizziness. One year ago he contracted a single chancre, which was followed three months later by a rash and sore throat. Although subject to headaches for three years, these have become worse since acquiring syphilis, and have been so severe as to prevent him working for five months. There is no nocturnal exacerbation. During the past four months there has been difficulty of micturition, and an occasional resort to the catheter has been required. Weakness of the legs has also been coming on for some months, with a girdle sensation round the waist. He has had no antisyphilitic treatment up to admission.

Present condition.—Patient is fairly nourished and intelligent. Several small ulcers on the face and in the throat. There is paresis and spasm of both legs, with increased activity of the knee-jerk and of the plantar reflex, also slight ankle clonus. The gait is shuffling, the feet being dragged along, scraping the ball of the toes on the floor. Sensation is normal. Micturition frequent, five or six times by day and three or four by night. The pupils react to light and accommodation, and there is no change in the fundus. The thoracic organs and urine are normal.

In April, weakness of the arms, especially the left, with absence of the cremaster and abdominal reflexes.

In July, when washing, he fell down, but without losing consciousness, and was found to have lost power in the right limbs. There was also right-sided ptosis and facial paralysis.

Antisyphilitic remedies, both inunction of mercury and iodide, have been administered since his admission. Power in the limbs has been gradually increasing, and he is now able to walk fairly, but there is still ankle clonus and increased knee-jerks. Loss of power in the legs and, later on, in the arms, the urinary disturbance, and girdle sensation, coming on gradually, point to the existence of a chronic myelitis. There is no marked pain or spasm in the back or along the spinal nerves, as is usual in meningitis, and the absence of any disturbance of sensation also excludes the latter disease. The effects of treatment have not been very marked, and it is probable that any improvement which has taken place may be attributed to prolonged rest. The attack of hemiplegia, preceded by head-pain and unaccompanied by loss of consciousness, is the recognized character of thrombosis, due to syphilitic arteritis, and it may be remarked that this came on when the patient was under active treatment by mercurials and iodide. One of the most noteworthy points of the case is the early date at which nervous symptoms came on. It is not usual to find either myelitis or hemiplegia until after a lapse of several years, whilst here spinal symptoms supervened not more than eight months after the chancre, and hemiplegia in about sixteen months.

NEW OPERATION FOR REPAIR OF LACERATED PERINEUM.

By Alexander Duke, F.C.P.I.,
Gynæcologist Steevon's Hospital, Ex-Assistant Physician Rotunda Hospital, &c.

I wish to bring before the notice of my gynæcological brethren an operation I have designed for the restoration of a lacerated perineum, easy of performance, and which will, when properly executed, form a good perineal floor, and I might almost say practically a new perineal body. The patient, having been prepared by the usual preliminary steps required for the old operation when under the influence of an anæsthetic, is placed in the lithotomy position, the left index finger being introduced almost its entire length into the rectum, a long, straight, double-edged bistoury is made to pierce the tissues *in front of the anus at right angles to the vulva*, and, guided by the finger in the rectum, is made to penetrate the septum for two and a half inches upwards, the incision being enlarged laterally to two inches as the knife is withdrawn. The patient is then turned on her side, and on the points of incision being pressed together, a lozenge-shaped opening will be seen, and when all sutures required have been introduced and are properly adjusted and approximated, the two cut surfaces are brought into direct apposition. The sutures are introduced by a strong cycle-shaped needle with eye near point, mounted on a handle, strong silver wire being the suture preferred. The needle is introduced at edge of incision, and, guided by a finger in the rectum, is made to travel under the cut surface to its full depth above, describing the arc of a circle; and on point of needle appearing *directly opposite*, it is threaded with suture and drawn through. On the ends of this suture being drawn together with the fingers, a good idea can be formed of how many additional stitches may be required. When all considered necessary have been inserted, passed through leaden bars perforated at intervals, and approximated, a finger of each hand passed into the rectum and vagina will at once recognize the gain in thickness of septum, the external tissue being pushed fully an inch forward from anus, and forming a thick and solid

perineal body. The incision being a deep one, on union taking place between the raw surfaces, a considerable amount of support must be afforded in cases where a pessary is required, or where there is much tendency to prolapse of uterus or vaginal walls. My experience of the operation, though up to the present time limited, has satisfied me with the results, and there being *no loss of tissue whatever*, should the operation fail, it cannot add any difficulty to a subsequent one.

Even should the perineum be lacerated to verge of anus, what I describe can be done. I find that leaving the sutures for ten days is generally sufficient, but if I am in doubt as to the union being strong, I cut the wire, but leave it *in situ* for a day or two longer, thus affording some support, and relieving the strain on the edge of suture holes, and I also support the parts by long strips of adhesive plaster carried from hip to hip over new perineum. The wire should be stout and not too tightly twisted.

My friend, Dr. More Madden, has kindly given my operation a trial, and was much pleased with the results, especially in one of his cases where the old plan of operation had been tried previously but failed owing to the patient's poor state of health and a want of healing power.

The advantages of my plan of operation are briefly these :—

1st, The simplest of performance as yet proposed ; no danger of hemorrhage, the surface, when dry, being brought together.

2nd, No danger of sepsis, as the incision is not open for the admission of any discharge from either vagina or rectum during healing process.

3rd, No loss of tissue, and consequently no harm done should the operation fail.

CASE IN PRACTICE—UNTOWARD EFFECTS OF SANTONIN (?).

By August Schmidt, M.D., Montreal.

In the forenoon of the 9th December, 1890, I was called to see a little girl aged 4 years and 11 months. When I saw the child she was in convulsions since some minutes. She had been placed in a tub of hot water with mustard. I kept her in the water and applied cold to head. Gave chloral hydrate, bromide of potassium, also inhalations of ether, all to no good effect as to termination. At first the spasms were limited to the face, then became unilateral, and finally general, death occurring about an hour and a half after the onset. During the convulsions she was unconscious.

She had had a cough for about a week. Would grind her teeth and yawn; would vomit sometimes after the cough, after which she would sleep better. On account of the above symptoms the mother got an old prescription repeated without consulting any physician, the directions for the administration of which she had been told about a year before to be one powder morning, noon and night.* The mother gave the child the first about six in the morning, the second at about 11 A.M., and the third at about half-past 3 P.M. the same day. During the evening was not as lively as usual; went to bed and slept. At five the next morning the child made sign to the mother that she had had a stool and urinated in bed, something unusual for her to do. The mother noticed that the pillow was wet also. The child got up and had a very light breakfast. Complained of headache, wanted to go to sleep, could not sit up straight, and a short while after went into convulsions which lasted till death.

Past History.—Child grew fast; took cold easily. Had measles about two years previously. A year ago last September had a convulsion, the mother thinks in left side only; one eye was "crooked" at the time. The child was noticed to be dull and sleepy, and on account of those symptoms was given two

* After inquiry it was ascertained from the druggist that each of those powders contained grs. ii of santonin.

grs. of santonin, an hour after taking which she had a convulsion. Last June the mother thinks the child had something like a convulsion, only the eyes moving, the child holding on to a bedstead with her back towards it. This was likely caused by having had to run home from a good distance on account of a storm.

The mother, although not positive, thinks the child has had some santonin without taking convulsions. The child had been subject to headaches part of her life.

REPORT ON THE TREATMENT OF PULMONARY TUBERCULOSIS BY KOCH'S METHOD,

In Dr. MacDonnell's Wards of the Montreal General Hospital.

By Dr. W. D. Smith, *House Physician.*

Case I.—(*Continued from p.* 595.)

Fifth Injection—.004 c.c. Jan. 19th. Temperature 99°. No reaction.

Sixth Injection—.005 c.c. Jan. 21st. Temperature 99.5°. Had a severe fit of coughing at 9 P.M. Less than half an ounce of expectoration, which contains very few bacilli, one to five per field in the last four days.

Seventh Injection—.006 c.c. Jan 23rd. Temperature at 12 P.M. 101½°; before this rise of temperature he had a severe fit of coughing, some epistaxis, and profuse perspiration.

Jan. 25th.—No injection. Temperature above 98½° all day, rising to 101° at 2 P.M. He feels very much out of sorts. Complains of pain in right mammary region on coughing and on inspiration No friction here, but the râles are more moist and are increased in number. An occasional crackling râle is heard at the base of left lung. Expectoration half an ounce, mucopurulent. Bacilli are very much increased in number.

Jan. 27th.—No injection. Temperature during the last two days has been somewhat elevated, ranging from 99° to 100½°. The face has a flushed appearance, the appetite is poor, and he feels ill. Some epistaxis last night. Sputa half an ounce. Two to four bacilli per field.

Eighth Injection—.008 c.c. at 11 P.M. Jan. 28th. Temperature 102½° at 10 P.M. This afternoon, about three hours after the injection, he complained of feeling chilly. Had a violent fit of coughing in the

evening, with a feeling of nausea and epigastric uneasiness. Was unable to eat anything. At 9.30 P.M. had a chill, with severe epigastric pain. Had gr. ¼ of morphia at 11 P.M. followed by relief. Two and a half ounces of sputa; bacilli are very scarce.

Jan. 29th.—No injection. Temperature ranges from 99° to 101°. Has feeling of chilliness alternating with flushes of heat to-day. Urine normal. Two and a half ounces of muco-purulent expectoration, but scarcely any bacilli found in four slides examined.

Jan. 31st.—No injection. Temperature 99° to 101° to-day and yesterday. Appetite poor; feels out of sorts and nauseated. No change in the physical signs.

Feb. 4th.—The temperature is gradually coming down, and he is beginning to feel as well as usual. Appetite is improving. Weighs 113¼ lbs. Expectoration is about half an ounce in the twenty-four hours and contains very few bacilli. Rales are not so moist, and are less in number. Apart from this the physical signs are the same.

Ninth Injection—.009 c.c. at 11 A.M. Feb. 5th. Between 8 and 10 P.M. he complained of chilliness, coughed very much, and had slight epistaxis from right nostril. Temperature 102° at 10 P.M.

The following day he felt ill and out of sorts, his face being quite flushed at times. Temperature not above 100°.

Feb. 16th.—Since the 6th inst. the temperature is seldom above 99°. There are fewer moist râles to be heard, otherwise the physical signs remain the same. There is seldom more than half an ounce of expectoration in the 24 hours. Bacilli are present as before. His general appearance has improved since the last injection, and he now weighs 115 lbs., a gain of 4½ lbs. since the Koch treatment began.*

Tenth Injection—.009 c.c. Feb. 17th, at 2 P.M. At 8 P.M. he had a very severe fit of coughing, some epistaxis from right nostril, profuse perspiration, and a temperature of 102½°.

CASE II.—*Continued from p. 597.*)

Fifth Injection—.004 c.c. Jan. 19th. Temperature reached 100°. No other symptoms.

Sixth Injection—.005 c.c, Jan. 21st. No reaction.

Seventh Injection—.005 c.c. Jan. 23rd. Temperature 100° at 10 P.M. Half to one ounce of muco-purulent expectoration, which contains from five to twenty bacilli per field; some of these are granular in appearance. These are also seen in clumps.

* On Dec. 6th, 1890, his weight was 118 lbs.

Eighth Injection—.007 c.c. Jan. 25th. Temperature 100°. Otherwise his condition is the same. Half an ounce of expectoration both to-day and yesterday, which was slightly streaked with blood. Two to ten bacilli per field to-day, but yesterday there were as many as fifty in some fields.

Jan. 26th.—One ounce of expectoration, muco purulent, numullated, no blood, one slide containing scarcely anything but bacilli.

Ninth Injection—.008 c.c. Jan. 28th. No result. Two drachms of sputa containing two to twenty bacilli per field.

Tenth Injection—.009 c.c. Feb. 1st. No result. Bacilli are not quite so plentiful.

11th, 12th and 13th Injections—.01 c.c., .011 c.c. and .012 c.c. Feb. 3rd, 5th, and 13th. No reaction.

14th, 15th and 16th Injections—.013 c.c., .013 c.c. and .014 c.c. Feb. 10th, 13th and 17th. No result. Since the 5th inst. the temperature has been as high as 100° on three occasions. The physical signs remain the same, but he is improved in his general appearance and has gained 7 lbs. in weight since his admission, Expectoration is usually less than half an ounce in the twenty-four hours, and the number and character of the bacilli remain about the same.

Feb. 21st.—Patient having become discontented with the results of treatment, left the hospital.

CASE III.—(*Continued from p.* 598.)

Fifth Injection—.003 c.c. on Jan. 19th. No reaction. Temperature 99⅘° at 8 and 10 P.M.

Sixth Injection—.004 c.c. Jan. 21st. Temperature 99°. Has a tickling sensation in his throat which causes him to cough more frequently.

Seventh Injection—.005 c.c. Jan. 23rd. Temperature 99⅗° at 8 P.M. Was very restless last night, complaining of nausea and epigastric uneasiness. Has a slight attack of diarrhœa.

Eighth Injection—.006 c.c. Jan. 25th. Throat feels a little sore, otherwise no change. Temperature 99½°. Has gained 4½ lbs. in weight since the 16th inst.

Ninth Injection—.007 c c. Jan. 28th. Temperature at 12 P.M. 100⅘°. His throat is more painful, especially on swallowing. Complains of nausea, and vomited after eating last evening. Examined this evening by Dr. Major, who found the swelling less and the ulcers diminished in size. There is no apparent change in his voice, and the physical signs in the lungs remain the same. The urine contains a small precipitate of urates.

Jan. 31st.—No injection since the 28th inst., but the temperature is persistently higher than usual since, being above 99°, reaching 101½° at times. Cough is very troublesome, with increased expectoration ; no bacilli. Commenced using inhalation of Friar's balsam for the cough.

Feb. 3rd.—No injection since the 28th. Temperature has

remained above 100° since the 31st Jan.; yesterday at 6 A.M. it reached 104°. No chills or pains in the limbs. Pulse also is increased in frequency.

Dr. Major found, on laryngeal examination, that the epiglottis was very much swollen yesterday, about $\frac{3}{32}$ of an inch. Cough is very troublesome. Expectoration 20 oz. in the twenty-four hours, consisting chiefly of mucous and saliva; no bacilli. Appetite is very poor; cannot take solid food, as particles appear to get into the larynx and cause vomiting. Feels nauseated and has pain in the epigastrium at times.

Feb. 4th.—Temperature ranges from 99° to 101° to-day. His condition is much the same as yesterday. With the exception of a slight attack of diarrhœa, his bowels are constipated. No change in the physical signs in the lungs. Dr. Major finds the following conditions present this evening: Epiglottis more swollen, showing points of active disease. Arytenoid regions, inter-arytenoid regions, and aryteno-epiglottidean folds much more swollen. Ulcerative patches are numerous. The disease in the larynx is in a state of great activity.

Feb. 6th.—He still feels quite ill; complains of soreness of the throat; appetite is very poor, and he suffers from nausea, with vomiting at times. Cough is very frequent and distressing, accompanied with 15 to 25 oz. of expectoration, consisting chiefly of saliva and clear mucus. Is very restless and unable to sleep at nights. Dr. Major finds the following conditions present: Epiglottis still very much swollen; the arytenoids and their neighborhood very much swollen. The ulcerated appearance of two days ago is diminished. On œsophageal side of inter-arytenoid space is a large patch of ulceration.

Feb. 13th.—All the above-mentioned symptoms have been gradually subsiding and he is able to be up and about, though feeling very weak, having lost 12 lbs. in weight since Feb. 1st. The temperature rises to 100½° every day. The physical signs remain the same in the lungs. Dr. Major finds his throat in the same state as when admitted. The patient left the hospital to-day.

Retrospect Department.

RETROSPECT OF THE PATHOLOGY OF PNEUMONIA.

By F. G. Finley, M.D.,
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For some years the view that pneumonia is a specific disease has been gradually, but surely, gaining ground, and this view has been strongly supported by bacteriological researches. The great majority of cases, if not all, of acute lobar pneumonia are associated from the first with the presence of the *diplococcus pulmonica* of Fränkel. Netler found it in fifty consecutive cases of this disease, whilst Weichselbaum found it in 81 out of 88 cases. Netler* has carefully collected all the known facts of this organism, with a full bibliography. As the name implies, they are usually grouped in pairs, although sometimes single, surrounded by a capsule, each element being somewhat oval-shaped and the extremity tapering off like a lancet. In advanced cases of the disease, or after cultivation on solid media, the capsule may be absent, but it persists after cultivation in fluids. At times, especially in cultures, the cocci are grouped in chains of five or six elements like streptococci. Cover-glass preparations are readily stained by gentian violet or Fuchsine in aniline water. They are not decolorised by Gram's solution, and are thus readily distinguished from the pneumo-bacillus of Friedlander. A temperature above 25°C. is required for their development, the most favorable being from 34 to 39°C. Gelatinised serum faintly alkaline, bouillon, and solidified serum from suitable media. In the first of these, between the higher temperatures, colonies appear in about sixteen hours as rounded transparent islets, seldom over 1 mm. in diameter. After six or seven days they fail to grow if transplanted. Inoculation of the pure cultures in the subcutaneous tissues of the mouse or rabbit usually cause death in from twenty-four to forty-eight hours, the spleen being much swollen and the blood dark and fluid. Post-mortem, the encapsuled pneumococci are found in the blood

* Arch. de Medic. Exp., 1890, 5, 6.

and tissues. Injections into serous membranes produce fibrinoplastic exudations, and if the lung is touched, hepatization of *both* sides occurs. The guinea-pig has a high power of resistance to the organism, and the dog and sheep a still greater.

Temperatures over 40°C. (104°F.) diminish and then arrest the virulence of the organism, whilst, on the other hand, successful inoculations have been performed after exposing cultures to the temperature of an ice-house for several days. Desiccation does not destroy their virulence, so that the poison may be readily spread by dried sputum. Cultures on solid media usually prove inocuous after the seventh day. In fluid media the virulence is retained longer, and it is greatly increased by passing through the rabbit.

An application of these facts explain the limited duration of the disease, and it has been shown that the period of the crisis corresponds with the loss of virulence of the pneumococci, whilst cultures do not succeed after defervescence. The organism is found not only in primary but also in the secondary lobar pneumonias of scarlatina, typhoid, and influenza. It is also present in some few cases of lobular pneumonia.

The pneumococcus has been found in the saliva and nasal fossæ of healthy people, but it is much more frequent in the mouths of those who have had the disease, and this probably explains the tendency to recurrent attacks. The pneumococcus in the saliva is much more virulent, not only during an attack, but also during epidemics of the disease, and becomes harmless during defervescence.

A certain amount of diagnostic value may be attached to the presence of the pneumococcus in the sputum, provided they are present in large numbers and surrounded by a well marked capsule. The pneumococcus plays an important part in the complications of the disease. It has been found in the associated pleurisy, pericarditis, nephritis, peritonitis, meningitis, otitis media, etc. In grave cases it may be found in the blood and in the vegetations of ulcerative endocarditis, of which pneumonia is a not unfrequent cause.

Apart from pneumonia, the organism may exist in the above

affections, and it probably causes one-fifth of the cases of empyema in the adult and over half in the child. It may be suspected if the pus is viscid, greenish, and does not separate readily into serum and plasma. This form of empyema may be cured by simple puncture, and is much more favorable than that due to streptococci, owing to the limited duration of the virus. Being, however, in a fluid medium, a pleurisy lasts longer than a pneumonia.

Pasteur recognized the diplococcus in the saliva of a case of hydrophobia.

Of other bacteria, the diplococcus of Friedlander, together with streptococci and staphylococci pyogenes aureus and albus are found chiefly in the so-called catarrhal pneumonias, and are sometimes present with the diplococcus of pneumonia. Friedlander's pneumo-bacillus is a possible exciter of lobar pneumonia in a small number of cases. The pneumobacillus resembles the pneumococcus closely in its microscopic characters. It is enveloped in a distinct capsule, which is absent in cultures. Usually single, it may, however, occur in pairs; one diameter is greater than the other, and this is much more apparent in bouillon cultures, so that it may be classed with the bacilli. It is distinguished from the pneumococcus by being decolorised by Gram's method, by its virulent action on guinea-pigs and mice, but having no effect on rabbits, and, lastly, by its character in cultures.

QUARTERLY RETROSPECT OF GYNÆCOLOGY.

By T. Johnson-Alloway, M.D.,
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Laparotomy.—Dr. Bantock, in speaking of antisepsis in abdominal operations, states that the patient gets a bath by a competent nurse just before the operation. For instruments, sponges, ligatures and towels he uses boiled water; his hands and arms are well scrubbed. He makes a short incision (three inches long). In tying the pedicle, he secures the outer fold of the broad ligament with a separate ligature by going in nearly an inch from the outer edge with his needle and tying down on this before transfixing for the main ligatures. He employs this precautionary ligature because he had lost some cases by slipping of the outer edge of the pedicle, causing fatal secondary hemorrhage. Since employing this ligature he has not lost a case. The use of this ligature, suggested by Dr. Bantock, must be of undoubted service in obtaining security from hemorrhage, especially in cases of broad ligament cysts, where considerable thickness of muscular tissue must necessarily be included in the transfixing ligature. Dr. Bantock speaks of the use of hot salt-water for flushing the abdominal cavity when necessary. The proportion of salt is seven parts to one thousand of hot water, and he speaks of the method as a "true indirect transfusion." Dr. Bantock uses the drainage-tube in cases where there have been many old adhesions broken down, where he has had to apply many ligatures, and, consequently oozing afterwards. If the contents of a sac ruptures, or if he finds filthy fluid in the abdominal cavity, he always irrigates the cavity with several gallons of hot salt-water. He does not approve of pressing sponges firmly against the peritoneum to absorb fluid of any kind, but irrigates instead. For ligatures for everything except the pedicle, he uses three sizes of the best silkworm gut; for the pedicle, silk only. He does not allow his patients anything to eat for twenty-four hours before the operation, and gives nothing for twenty-four hours afterwards. Water is also withheld. In cases of bilious vomiting, he gives fifteen grains of carbonate of

soda in three ounces of hot water. This relieves every time. He gives no opium to relieve pain, because, having given the bowels nothing to do for twenty-four hours before the operation and twenty-four hours of abstinence following it, they remain collapsed and quiet without the aid of opium.

Some Points in the Morbid Anatomy of the Fallopian Tubes. —Dr. F. W. N. Haultain of Edinburgh publishes an interesting paper on this subject in the *Edinburgh Medical Journal*, December, 1890. After describing the anatomy of the tubes, Dr. Haultain points out the fact that the tubes are attached to the peritoneum by a very delicate and loose connective tissue, and that the serous covering can easily be stripped off. The lumen of the tube being continuous on the one hand with the cavity of the uterus, and on the other with the interior of the peritoneal sac, affords the only example in the body of a direct continuity between a mucous and a serous lined space. From this continuity of its lumen with the endometrium, inflammatory disease of that organ can be carried directly to the ovary and peritoneum. It may be inferred, therefore, that an inflammation of the tube is generally secondary to that of the uterus. Dr. Haultain divides inflammatory diseases of the tubes into two varieties: 1st, *Endosalpingitis;* 2nd, *Interstitial salpingitis.* Of endosalpingitis, the inflammation may be catarrhal or purulent; the latter is being merely an aggravated stage and form, and the boundary line between them impossible to clearly define. The milder variety is the result of extension of ordinary non-specific endometritis; while the purulent type is due to the direct upward spread of *acute* gonorrhœa. Pyosalpinx is, however, undoubtedly the septic infection after labor, but is sometimes traceable as a complication or sequelæ of the zymotic fevers. When the lumen of the tube remains patent, the secretion is apt to escape into the peritoneal cavity and give rise to inflammation of the surrounding structures—perimetritis, periovaritis, and ovaritis. When the inflammatory process extends to the deeper structures of the tube, we have the second type before-mentioned, viz., *interstitial salpingitis.* At this stage of the disease we have much thickening of the submucous layers, giving rise to a

hard, thickened condition of the tube. As a rule, however, the muscular wall is unaffected. Dr. Haultain, however, does not mention the fact that Dr. Mundé of New York first drew attention to this condition of the tubes under the term *Pachysalpingitis*. The next lesion of the tube Dr. Haultain draws attention to in his paper is a very curious one,—*contortion of the tube*. This is a twisting or bending of the tube itself irrespective of inflammation or any other recognized or morbid condition. It causes most distressing symptoms to the patient, and is of more frequent occurrence than suspected. In many cases it may be associated with inflammatory disease, but by no means in all. The inflammation is always external to the tube, and is probably secondary, and it is to the contortion of the tube that we have to look for an explanation of the distress and other symptoms from which the patient suffered. The contortion, as a rule, is a spiral angular bending, so that on making a longitudinal section of the tube its lumen will be found appearing at different planes, here *cut* longitudinally, and there transversely, while at the angles it may be completely occluded from apposition of its mucous surfaces. On microscopical examination the structure of the tube will be found in every way normal, the epithelium in no way changed, while the peritoneum will be seen to run smoothly over its surface without dipping into the angles formed by the bending of the organ. The tube thus appears to be curled up between the layers of the broad ligament like a snail within its shell. The external surfaces of the walls of the tube will be found in some cases in close apposition, with almost no tissue between them; in others there may be some connective tissue; while in those cases associated with severe surrounding inflammation there will be found a considerable amount of inflammatory connectioe tissue. To the naked eye the tube looks shortened and thickened, but section of it shows this to be only apparent. One of the most serious conditions associated with this interesting malformation of the tube is sterility, as one would expect from occlusion of the tube at the angles of bending, proving an almost insuperable barrier to the passage of the elements of generation. The constant pain in the side which the

patient suffers at the menstrual period may be accounted for by the bending of an organ of such great vascularity as the Fallopian tube. As regards the etiology of this interesting lesion its cause is supposed to be developmental. Before birth the Fallopian tube is in an exactly similar state to the lesion now being considered—*i.e.*, it is twisted in a spiral manner—and it is not till puberty that, by a gradual process of straightening, it has acquired its normal undulating form, so that it is probably a continuance of the fœtal state ; but in the majority of cases it must be looked upon as a return to that condition, because the most frequent and best marked examples are met with in women who have previously borne children, and, curiously also, the large majority of examples of this lesion are found in women who date their sufferings from a past puerperal state. It is well known that the Fallopian tube during pregnancy undergoes a similar change to the uterus during that state, viz., hypertrophy. This hypertrophy is almost altogether one of elongation, the tube at term being from six to eight inches in length, instead of four or five inches, as in the unimpregnated state.

From these interesting observations one may naturally infer that if involution of the tube be imperfect or irregular, twisting of it will be the result, its loose attachment to the layers of the broad ligament offering little or no resistance to the tube curling up between them. Dr. Haultain admits that this angulation of the tube in some cases is directly caused by the dragging of peritonitic adhesions, but that in many cases no such adhesions can be found. Dr. Haultain relates a few cases of pyosalpinx and other dilated conditions of the tube, where this angulation spoken of prevented fluid from passing into the uterine cavity and thus caused sacculation of the tube, a condition so often met with. The curling of the tube also accounted for the series of loculi which one frequently finds a dilated tube to be made up of. In conclusion, Dr. Haultain summarizes thus :

1st, That simple contortion of the tube is an extremely common condition.

2nd, That it manifests itself as a spiral angular bending.

3rd, That it may occur independently of any inflammatory or other apparent morbid change.

4th, That when associated with surrounding inflammation, it is more probably the cause than the result of that process.

5th, That it is either congenital or acquired, the former a maintenance of the normal fœtal condition while the latter is frequently the result of subinvolution after parturition.

6th, When associated with a secondary endo-salpingitis it disposes towards encysted pyo- or hydro-salpinx from retention of the secretion, and thus give rise to the loculated condition of many of these tumors.

Lastly, In itself it is sufficient to give rise to those stereotyped signs and symptoms of disease of the appendages, viz., sterility and premenstrual dysmenorrhœa.

I have reviewed Dr. Haultain's paper more fully than usual, because I think the subject is of the greatest importance to scientists in this branch of surgery, and because I think the author has handled the subject in a most masterly way. One or two points, however, in the paper will admit of adverse criticism. Dr. Haultain's views in regard to the etiology of contortion of the tube, in the majority of oases, is certainly difficult to accept without due consideration. In nearly all of the cases of contortion of the tube which the reviewer has met with, there have undoubtedly been peritoneal adhesions drawing the duplicated coils of the tube towards each other, and in this way causing the condition in question. It is, however, not an uncommon thing to find a wavy condition of the tube at the same time normal in all its conditions, and therefore unlikely to give rise to symptoms spoken of by Dr. Haultain. We cannot therefore accept, unconditionally, Dr. Haultain's fourth conclusion, that when contortion is associated with surrounding inflammation it is more probably the cause than the result of that process.

Surgical Treatment of Uterine Myoma.—This title forms the heading of a most interesting paper read by Mr. Lawson Tait at the annual meeting of the British Medical Association, July, 1890. Mr. Tait, in speaking of the removal of the uterine appendages for the relief of myoma, gives a series of 327 consecutive cases with six deaths, giving a percentage of mortality of 1.8 per cent., which he says is a mere bagatelle of

risk, and far less than the mortality of any other serious operation in surgery. The last series that he published consisted of 219 cases with 4 deaths, and of these 215 cases now alive have extended, with few exceptions, to a period of at least twenty months since the operation. He says that in the great bulk of these cases the process of cure begins at once and is practically completed within six months. This is true of at least 90 per cent. of the cases, whilst in about 6 per cent. of the cases the cure is protracted over a period varying from twelve to thirty-six months. Of the 321 surviving cases in the whole series there are only 5 complete failures, 1.5 per cent.; that is, cases where the symptoms have been in no way relieved, and where the tumor has gone on growing. Mr. Tait attributes this failure, not to the operation, but to the imperfect way in which it was done. Three by these failures had already been submitted to hysterectomy; in all, removal of the ovaries was found complete, but in all of them one tube had been incompletely removed. In speaking of this operation for the relief of the soft variety of myoma, Mr. Tait now thinks that the incomplete removal of the tubes has more to do with the failure of the operation than the intrinsic quality of the tumor. Mr. Tait says that at the time he had almost made up his mind that this operation was not applicable to the soft œdematous variety, in which it would prove a failure, but that of late years he has had cause to change his mind in this respect—that he now considers the operation as successful for the cure of the œdematous variety as for the hard multi-nodular variety. He says; "Looking over the list of cases in which I have performed hysterectomy, I think that the proportion of the cases where I have been unable to remove the appendages and had to complete by hysterectomy has been about four per cent." This percentage does not include those cases of enormous tumor where he deliberately performed hysterectomy. Mr. Tait quotes an interesting feature in regard to the age of the patient having to do with the success or otherwise of the operation. That patients under 40 years of age, about 70 per cent. of the tumors entirely disappear; between 40 and 45, as a rule they do not entirely disappear, but

become markedly diminished, and after 45 the diminution amounts only to a shrinking. Mr. Tait alludes to the erroneous belief which exists in the professional mind that approach to the menopause gives anything like certain relief in cases of myoma, for no fewer than nine of his cases were upwards of 50 years of age at the time of the operation. Mr. Tait speaks of the existence of unsuspected intra-uterine polypi keeping up the hemorrhage for some time after the operation, until, in fact, they were extruded from the uterine cavity. In regard to a statement made by Dr. Thomas Keith that insanity followed the operation of hysterectomy in about 10 per cent., Mr. Tait states that he has done hysterectomy in a much larger number of cases than Dr. Keith, and has not known a single case of insanity to occur in his practice, although liable to occur after the most trivial operations in surgery. In speaking of the relative value of surgical operations for the cure of disease, he says that it would be very difficult to bring forward instances in which a higher value could be attained by any other operation than the one in the present instance. The operation not only relieves, but permanently and completely cures the disease against which it is directed, and that it must be admitted as one of the most brilliant additions to modern surgery of which we have any knowledge. Mr. Tait does not believe that the removal of the ovaries has anything whatever to do with the arrest of menstruation. Menstruation is rhythmical in process, and is governed by a special nerve mechanism. Ovulation is not rhythmical, and is not therefore governed by nerve influence more than any other gland function. Mr. Tait attributes success in this operation to the complete removal of the Fallopian tubes only, and that he believes the efficiency of the operation consists in the destruction of a nerve which lies between the tube and round ligament of the uterus, and that this nerve governs the periodicity of the phenomena of menstruation.

Modern Abdominal Surgery.—Sir Spencer Wells delivered the Bradshaw lecture on this subject at the Royal College of Surgeons, Dec. 18th, 1890. Sir Spencer takes up first anæsthesia. He states that he has always felt afraid of chloroform,

it being the only anæsthetic he has ever seen a death from, and wonders why his brethren still use it. He speaks favorably of the use of bichloride of methylene, which he has used with confidence for years.

Drainage.—After alluding to its first introduction by Peaslee in 1855 Sir Spencer states that in his own work he has always looked upon drainage as a practice to be avoided if possible, and only uses the tube when he has not been able to thoroughly cleanse the peritoneum, or thought that some oozing was likely to go on after the incision was closed; or when, some days later, he had reason to suspect the presence of fluid in the cavity. He thinks that the tube acts as an irritant and leads to the formation of fluid which it serves to remove. As late as 1855, after an experience of 300 recent cases, he maintained that it should be "almost entirely discarded." He says the explanation consists in the fact that under antiseptic precautions, as practised now, fluids in the peritoneal cavity do not decompose as they did formerly, therefore they are absorbed and are quite harmless. Sir Spencer is also opposed to the flushing or washing out of the peritoneal cavity, and is in strange contrast in this respect to his London colleague, Dr. Granville Bantock. Sir Spencer alludes in his paper somewhat extensively to Metchinkoff's phagacyte theory, by which the animal body protects itself against the ravenous attacks of bacteria, showing how Ruffer's recent investigations brought to light the destruction of micro-organisms by amœboid cells. This is a subject that every one is familiar with now, and is dealt with by Sir Spencer in somewhat an exhausted way in his paper.

In speaking of ovariotomy, Sir Spencer states that he has performed this operation twelve hundred and forty-nine times upon twelve hundred and thirty patients, and that in a little more than thirty years there have been thirteen hundred and seventy-eight cases of ovariotomy done in the Samaritan Hospital with a mortality of 14.13 per cent., and that in the last four years two hundred and fifty-nine cases have been operated upon with a mortality of 4.4 per cent. In speaking of uterine tumors the lecturer quotes that well known dictum of Dr. Keith's: "So

strongly do I now feel on this subject that I would consider myself guilty were I to advise my patient to run the risk of her life before having given a fair trial to this treatment (electricity). Even though I were sure that the mortality would not be greater than that which hysterectomy has given me in my private cases —under four per cent." He goes on to say that Dr. Keith informed him that he had, since writing the above, done but three hystereetomies, and for fibrocystic tumors only.

In speaking of Battey's operation or oöphorectomy, Sir Spencer speaks very feelingly in regard to the suspected abuse that this operation has been put to, and cautions the profession to have regard to it from a moral as well as well as from a therapeutic standpoint, but he says that it has proved undoubtedly useful in properly selected cases of innocent uterine tumors.

In treating of the subject of *myomectomy* and *hysterectomy*, he says that in England the extra-peritoneal treatment by pin and serre-nœud, by elastic ligature, or the clamp, has so far yielded better results than the intra-peritoneal ligature. In Germany the reverse is the case, and I cannot help thinking that, as in ovariotomy, the clamp at one time gave better results than the ligature, but gave way to intra-peritoneal methods, as it will be with myomectomy. This will, of course, involve improvements in the mode of applying the ligatures, which will no doubt be suggested. He goes on to say that the principle he first insisted on of uniting not only the *edges* but the flat *surfaces* of the peritoneum when closing the opening in the abdominal wall after an ovariotomy became of even greater importance in closing the uterine wound in Cæsarian section and the divided edges of the peritoneal coat of the uterus in myomectomy. Sir Spencer Wells mentions two cases wherein he performed myomectomy and adopted the same method of suturing the uterine wound that Sänger does in Cæsarian section (treating the pedicle intra-peritoneally). Both these cases were successful. Sir Spencer now goes on to speak of Cæsarian section and Porro's operation. Before 1865 Cæsarian section was a very fatal operation, few mothers or children being saved. Porro's amputation certainly lowered the mortality, but did not bring it below

56 per cent. in regard to the mothers. Sir Spencer speaks of the great advantage of the Sänger-Leopold method of doing Cæsarian section, which has recently given a mortality—five per cent.—almost as good as average ovariotomy. Surely this is a result of which modern surgery may be justly proud. The reviewer knows of four consecutive successful cases of Cæsarian section performed recently by Dr. Howard Kelly of Baltimore, under the Sänger method. Sir Spencer Wells concludes his oration by alluding to the surgery of the spleen, liver and gall-bladder, operative surgery of the kidney, and enterectomy.

Plastic Operations on the Perineum.—Dr. Alexander Duke of Dublin describes in the *Dublin Medical Press* his new operation for the repair of a lacerated perinenm. The operation consists in passing a long, straight, double-edged bistoury through the tissues of the perineum in front of the anus, at right angles to the vulva, and guided by the finger in the rectum penetrates the septum for two and a half inches upwards, and laterally the wound is enlarged to two inches as the knife is withdrawn. On the points of this incision being pressed together a lozenge-shaped opening will be formed. The sutures are introduced by a strong sickle-shaped handled needle with the eye near the point. Silver wire is used. The sutures are removed in ten days. The parts are also supported by straps of adhesive plaster carried from hip to hip. Dr. Duke sums up as follows regarding his operation :

1st, The simplest of performance as yet proposed ; no danger of hemorrhage, the surface, when dry, being brought together.

2nd, No danger of sepsis, as the incision is not open for the admission of any discharge from either vagina or rectum during the healing process.

3rd, No loss of tissue, and consequently no harm done should the operation fail.

In commenting upon this operation of Dr. Duke's, I must say that it is simply the flap-splitting operation of Mr. Tait with this difference, that Dr. Duke uses a knife, whereas Tait recommends the scissors. It is evident also that the septum cannot be split either as carefully or as efficiently with the knife as with the

scissors. The best method to adopt in splitting the septum in this operation is to commence with the scissors and continue the separation of tissue with the thumbs, occasionally dividing old cicatricial bands with the scissors when encountered. An important element in all methods of the flap-splitting operation appears to me would be difficult to obtain by Dr. Duke's method. I allude to the necessity of the splitting of the septum high up along the borders of the vulva in order to bring the torn muscles and fascia well together when the sutures are tied. In this way only can we obtain reparation of the pelvic floor and perineum. In regard to Dr. Duke's conclusion, I would say—

1st, It is not well to suggest that certain operations are very simple, because its the surest way to have them abused. As regards hemorrhage, surgeons do not generally regard it as a danger in this operation.

2nd, As regards the danger of sepsis, all flap-splitting operations upon the perineum are exempt alike from infection from discharge from vagina or rectum.

3rd, In all flap-splitting operations it is understood that there should be no loss of tissue. Dr. Duke does not say whether his operation is done under irrigation or not; also, I would suggest the employment of silkworm gut instead of silver wire as a suture material in all perineal operations. It is more easily and rapidly worked than any other suture, and can be rendered absolutely aseptic by a proper mode of preparation.

Repair of Recent Laceration of the Perineum.—Dr. Hunter Robb of Baltimore writes a paper in the *Johns Hopkins Hospital Bulletin* for December last upon this subject. Dr. Robb uses silk or silkworm gut as sutures. He begins at the upper angle of the wound and introduces the needle an eighth of an inch from the margin of the tear of the vaginal mucous membrane, bringing it out at the bottom of the rent, at a point much nearer to the operator than the point of entrance, and reintroduces it at the bottom of the tear, bringing it out on the opposite side at a point corresponding to the original point of entrance. The object of passing the sutures in this manner is to pull up the floor of the rent as high as possible. These vaginal sutures are

tied at once from above downwards. Two or three superficial perineal sutures on the outside completes the operation. Dr. Robb gives some very useful hints on the after-treatment of these cases, and especially alludes to the fact that it is not necessary for the patient to lie motionless upon her back, but be allowed to turn gently from side to side. The parts are dusted frequently with iodoform and boracic acid powder, and the urine is withdrawn with a catheter if necessary. Vaginal irrigation is only carried out in cases of decomposition of the lochia. The sutures are removed from in from seven to nine days. Dr. Robb speaks of the more extensive tears, especially those which go through the sphincter, splitting up the septum. These latter tears he advises being reduced to a simpler form by a series of superficial sutures passed on the rectal surface and tied in the rectum. The remaining tear can then be closed as already described.

The reviewer admires Dr. Robb's ingenious method of repairing the recently lacerated perineum, but he mentions in his paper the fact that Dr. Emmet has well said, " Any rupture round the vaginal outlet takes the drawing-string out of the bag and lets the pelvic viscera drop out." Now the replacing of this very drawing string would be apparently all we require to make things again perfect, and if Dr. Robb will refer to the reviewer's article on Perineorrhaphy in *Buck's Reference Hand-Book of Medical Sciences*, Vol. V, he will there see that the recently torn perineum can be efficiently repaired by the use of one suture only, and that this one suture, when properly placed, acts as the true drawing-string spoken of by Dr. Emmet. This one-suture method lifts the pelvic floor more perfectly and solidly than other methods, in virtue of its having the central point of the perineum for a supporting pillar, around which the suture runs. Functionally, this suture not only lifts the pelvic floor to its normal height, but it also shortens the posterior vaginal wall, upon which depend good after results in all cases of perineal lacerations. The old adage quoted by Dr. Robb, " A stitch in time saves nine," applies most adroitly to my operation. Dr. Robb's excellent paper is illustrated by numerous ingenious drawings to demonstrate his method. A careful study will well repay those interested in this subject.

Hæmatoma of the Ovary.—DORAN reports the following case in the *Transactions of the London Obstetrical Society*. A patient was admitted to the Samaritan Hospital six months after a sudden attack of pain in the right side of the abdomen. A round, elastic, and freely movable tumor was observed. Mr. Thornton performed laparotomy and removed the right ovary enlarged to the size of a small orange, in the centre of which was found a hard blood-clot. This was an example of follicular hemorrhage described by Winckel and Olshausen. BOLDT reports a case of a similar nature, where he performed laparotomy for peritonitis due to the rupture of hæmatoma of the ovary. This patient stated that on the day preceding the first examination she had been seized with a sudden pain in the left ovarian region and at once became unconscious. There was general pain in the abdomen and frequent vomiting. Temperature 103.7° and pulse 120. Vaginal examination was negative, but it was thought that a pyosalpinx had ruptured. On opening the abdomen, nearly a quart of fluid and coagulated blood was removed from Douglas's pouch. The left tube and ovary were removed. The patient recovered. The specimen showed a normal tube and a large ovary, on the posterior surface of which was a ruptured hæmatoma.

Hæmatoma of the ovary would appear to be more common than generally suspected. The reviewer has had two cases within the last six months, where, in one case, the blood-clot had converted the ovary apparently into a mere shell, but had not been ruptured until its removal at the operation. In the other case the blood-clot was the size of a filbert, hard and fawn-colored, and was also expressed from the ovary during its removal. In both of these cases the patients were young, and laparotomy was undertaken to relieve constant pain.

Salpingo-Oophoritis.—LEBEDEFF has observed that after repeated examinations of patients with suspected tubal disease he was able to demonstrate at one examination a well-marked enlargement of the tube upon one side, while at a subsequent examination nothing could be felt but an ill-defined cord. It was found that at the beginning of menstruation the distended

tube became larger, that toward the end of the period it diminished in size, and became absolutely collapsed at the cessation of the flow. This increase in size is explained not only by the general periodical congestion of the pelvic organs, but also by the fact that the mucosa of the tube becomes swollen at this time, and a certain amount of blood may escape into its interior; also, there may be a fresh secretion of fluid into the tube. The reviewer has repeatedly been able to determine enlargement of the tubes, but required in all cases the aid of an anæsthetic. The necessity for an anæsthetic during the examination in these cases is due to the extreme sensitiveness of the parts and the inability to conduct the examination satisfactorily without the patient being in an unconscious state.

Cancer of the Cervix Uteri.—PAWLIK has reason to propose an operation for the free extirpation, by the vaginal method, of the neck of the uterus when the seat of malignant disease, and of the perimetral connective tissue along with the diseased parts of the uterus. The operation consists in the free use of the knife upon those lateral tissues in which the disease usually spreads before it extends from the cervix to the body of the organ. Incidental to this operation are Pawlik's studies in regard to catheterism of the ureters, which confirm the views already pronounced by that surgeon, that the free removal of the infiltrated tissues may be accomplished without injuring the ureters. This operation of Pawlik's may obtain some place in uterine surgery, but we feel the difficulty of catheterizing the ureters by an unpractised hand will lead to many unsatisfactory cases from injury to the ureters during the operation. Pawlik himself embraces every opportunity to practise the catheterization of the ureters, for he finds that only in that way can he obtain his remarkable dexterity. It is evident from this that the average operator may not at once succeed in following his example without a guide in the ureter, it would certainly be unsafe to attempt the radical removal of connective tissue surrounding the diseased cervix, and impossible to determine whether the ureters were not themselves involved in the disease.

Ignipuncture in the Treatment of Lacerated Cervix Uteri.—Dr. Alex. Duke (*Brit. Med. Journal*) describes a method of his in the treatment of hypertrophied cervix uteri, whereby the cervix is punctured in several places by a thermo-cautery needle or instrument with a fine point. Dr. Duke states that any one can do this, even with a heated copper rod through a cylindrical speculum. He has found ignipuncture of considerable value in lacerations of the cervix, when hardly bad enough to demand Emmet's operation.

The reviewer does not agree with Dr. Duke in the off-hand, light treatment of female patients by such methods. Ignipuncture of the cervix has been tried years ago by French surgeons and has been found not only to have made the part operated upon much more cicatricial than it was before, but has been the cause of septic inflammation in many cases. The reviewer would therefore caution against this procedure, and advise instead the performance of Emmet's or Schroeder's operation as a more surgical and safe procedure.

Endoscopy of the Female Urethra in Gonorrhœa.—Janovsky (*Wiener Med. Presse*, Sept. 7, 1890) has practised endoscopy in a large number of cases of gonorrhœa in the female, and has thus added considerable to our knowledge of the pathology of the disease. Examinations during the acute stage are difficult without the aid of cocaine. Acute gonorrhœa may be circumscribed or diffuse ; the mucous membrane is much swollen with collections of pus between the folds ; the walls are covered with small abscesses, and Skene's lacunæ contain pus in which gonococci can always be found. Erosions and circumscribed hemorrhages are frequent.

Gonorrhœal Salpingitis.—Merge (*Med. Anzieger zum Centralblatt für die Ges. Med.*, Sept. 13, 1890) in his bacteriological examinations of the contents of the tubes from twenty-six cases of pyosalpinx, was able to demonstrate the presence of micro-organisms in eight instances, Neisser's coccus being found in three specimens of pus only. It is denied by some that contact of gonococci with the peritoneum can produce a special variety of peritonitis since only cylindrical epithelium is vulner-

able as regards these micro-organisms. Koch considers the question as still unsettled. If, however, gonococci are found in pus within synovial cavities (serous membranes), it is possible that the peritoneal cavity may contain similar pus. The probability is that the specific cocci have existed, set up their specific inflammation, and disappeared.

Kraurosis Vulvæ is a term given to a peculiar affection described by Orthmann (*Zeitschrift für Geburtshulfe und Gynäkologie*, Bd. XIX, Heft 2). He reports five cases of this peculiar form of atrophy of the pudenda, described first by Breisky. The latter describes the condition as an atrophy of the skin covering the external genitals, giving rise to fissures in the soft parts. The introitus becomes much narrowed. Microscopical examination of the affected skin shows that there are retrograde changes in the upper layers of the corium, causing sclerosis of the papillæ ; the rete being so thin in many places that the horny epidermis rests directly upon the papillæ. Sweat and sebaceous glands are absent. Regarding the etiology of this peculiar affection nothing is known. Medical treatment is useless. Blenorrhœa is supposed to be a prominent etiological factor. In Orthmann's cases there was excessive itching and burning, while in those of other observers this symptom was rarely present. All the cases presented the characteristic appearances described by Breisky—smoothness, dryness and cicatrization of the skin, atrophy of the labia, and stenosis of the introitus. With regard to the treatment, Martin excises the diseased parts *in toto*, and obtains good union of the wounds and complete relief of the distressing irritation without recurrence. Cases were reported by Schroeder and Küstner, in which obstinate pruritus vulvæ was similarly treated with good results, but kraurosis has never before been treated surgically.

Reviews and Notices of Books.

Differentiation in Rheumatic Diseases (so-called). By Hugh Lane, L.R.C.P., &c., Hon. Medical Officer to the Royal United Hospital, Bath. London: J. & A. Churchill, 11 New Burlington street. 1890.

The author, in conjunction with Mr. Charles T. Griffiths, has made a careful enquiry into the very numerous cases of rheumatic diseases (upwards of 3,000) which have come under his observation, with the result that he considers that there is an intimate causative relation between struma and rheumatoid arthritis. Osteo-arthritis is not synonymous with rheumatoid arthritis, but is looked upon as its terminal stage. Rheumatic arthritis, on the contrary, is never followed by osteo-arthritis, and is considered to be always of rheumatic origin. In the author's extensive experience, he has found cod-liver oil and similar nutritives of great efficacy when given in the early stages of rheumatoid arthritis. This is considered additional evidence of the close connection between this disease and scrofulous affections.

On Some Urinary Disorders connected with the Bladder, Prostate and Urethra. By Reginald Harrison, F.R.C.S., Surgeon to St. Peter's Hospital for Stone. London: Balliere, Tindall & Cox. 1890.

This small work consists of six lectures delivered at the St. Peter's Hospital during last year. They are written in the author's usual lucid and pleasant manner, and are very practical, being the result of a large hospital and private experience. The details of operative treatment, early and advanced, are given, and his own operation of puncturing the perineum and introducing a rubber tube for permanent drainage is described. Hæmaturia, stone in the bladder, the therapeutics and hygiene of the bladder, each take up one lecture. Mr. Harrison's views, which are so well known, are shortly and ably described in these lectures. Everything he writes on diseases of the bladder is

well worth reading. Surgeons and general practitioners will welcome the publication of these lectures.

Sterility in Women, including its Causation and Treatment. By ARTHUR W. EDIS, M.D. London: H. K. Lewis, 136 Gower street. 1890.

This very classical little work is a reproduction of a portion of Dr. Edis' "Manual of Diseases of Women," first published in 1881. There are some additions and cases recorded illustrating the methods of treatment both in primary and acquired sterility. The work is certainly very complete, and should be read by every practitioner, The pathology, however, of pelvic disease, especially that relating to the ovaries and Fallopian tubes, has so much changed of late, that the so-called mechanical treatment of dysmenorrhœa and sterility has lost ground to a great extent; more especially has this become evident with regard to the use of the sound and gradually-dilating tent, both of which have now become practically obsolete.

Epilepsy, its Pathology and Treatment. By HOBART AMORY HARE, M.D., B.Sc., Clinical Professor of Diseases of Children and Demonstrator of Therapeutics in the University of Pennsylvania. Philadelphia and London: F. A. Davis. 1890.

This essay was accorded a prize of four thousand francs by the Belgian Royal Academy of Medicine. It is a very good account of the nature (as far as is known), symptomatology and treatment of epilepsy. In a special work on epilepsy it is, we suppose, allowable and perhaps even expected of the author to mention all the drugs that have been at one time or another employed for its relief. This, however, serves no useful purpose. Dr. Hare mentions salicylic acid, strychnine and quinine as agents that should not be employed in epilepsy. We would be disposed to add to this list at least two of those agents that are recommended for the disease, viz., picrotoxine and atropine.

Ointments and Oleates, especially in Diseases of the Skin. By JOHN V. SHOEMAKER, A.M., M.D., Professor of Materia Medica, Pharmacology, Therapeutics and Clinical Medicine in the Medico-Chirurgical College of Philadelphia. Second edition, revised and enlarged. Philadelphia and London: F. A. Davis. 1890.

In the first part of this useful work we have a full and accurate description of the mode of preparation, administration and uses of the ointments officinal in the pharmacopœias of the United States, England, France, Germany, Austria, Italy and Spain. The second part deals with the pharmacy, pharmacology and therapeutics of the oleates. This edition has been prepared with great care, and will prove a valuable work of reference to all who are called upon to treat diseases of the skin.

Society Proceedings.

BATHURST AND RIDEAU MEDICAL ASSOCIATION.

The regular semi-annual meeting of this Association was held at Ottawa, on Wednesday, the 21st January, 1891. There were present Drs. Dixon (Pembroke), Mann (Renfrew), Groves (Carp), Preston and McEwan (Carleton Place), Wallace and Morrow (Metcalf), Easton and Agnes Craine (Smith's Falls), Church (Aylmer), McFarlane (Ashton), and a large number of the residents of the city.

The chair was filled by the President, Dr. A. F. Rodgers, Ottawa.

After a short address by the President, papers were read by
Dr. W. C. Cousens—"Treatment of Membranous Croup."
Dr. H. J. Horsey—"Eye Disease in Syphilis."
Dr. L. C. Prevost—"Vomiting of Pregnancy."
Dr. D. O'Brien—"Ligature of Brachial Artery" (case).

On the first paper, the question of the diversity of croup and diphtheria was the point discussed. Drs. Cousens, Henderson, Wright, Mann, Preston, Horsey and Wallace believe them to be distinct diseases; Drs. Prevost, Robillard and Small were inclined to the opposite view, that they are forms of the same disease.

Dr. Horsey's paper reported two cases, and referred to the fact that syphilis as a cause was frequently overlooked.

Dr. Prevost grouped the stomach disorders in three classes—where the stomach is simply disturbed, where the disturbance is due to reflex action, and where the whole system is in a state of reflex irritation. The first and second classes are those in which the numerous remedies are used with a degree of success; in the third class the only remedy is to empty the uterus. He reported two cases of the latter.

In the discussion, Dr. Dixon stated that he had had most success with oxalate cerium in 8 or 10 gr. doses. He thought no one remedy was to be depended upon and none to be despised.

Sir J. Grant had had success when other remedies had failed by elevating the pelvis.

Dr. O'Brien presented a patient where the brachial artery had been tied for a traumatic aneurism at the wrist.

The meeting adjourned, to meet at Gananoque in June.

In the evening the visitors were entertained to a dinner by their city confrères.

MEDICO-CHIRURGICAL SOCIETY OF MONTREAL.

Stated Meeting, December 19th, 1890.

F. J. Shepherd, M.D., President, in the Chair.

A Large Aneurysm of the Aorta.—Dr. Johnston exhibited this specimen, which had been sent by Dr. Tunstall of Kamloops, B.C. The specimen showed a diffuse dilatation of the ascending and transverse portions of the arch of the aorta. Springing from the right side of the arch, immediately above the aortic ring, was a sacculated aneurysm rather larger than the fist. The orifice of the sac was about 2½ inches in diameter, and the sinus of valsalva was involved in the dilatation, so that the segment of the aortic valves, which were thick and stretched out laterally, lay across the edge of this space. The sac lay in close connection with the posterior wall of the right ventricle, which was very thin in places, the muscle apparently being atrophied from pressure. Between the muscle fibres the whitish

fibrous wall of the sac could be seen in places. Dr. Johnston wished to know if any set of symptoms or physical signs were known to be associated with aneurysm in this unusual situation.

Chronic Calcifying Pericarditis.—Dr. Johnston exhibited this specimen for Dr. MacDonnell. The autopsy showed considerable dilatation and hypertrophy of both chambers with universal adhesive pericarditis. Extending almost entirely round the base of the heart, in the auriculo-ventricular sulcus, was a calcified plate lying within the adhesion, evidently due to unabsorbed exudation. At one spot about a teaspoonful of thick, whitish, purulent fluid lay encapsuled between the adhesion and the heart wall. The calcareous plate was not firmly attached to the heart, but rather to the mediastinal tissue. It was evident, however, that it prevented the mitral and tricuspid muscular rings from properly contracting. The valve segments themselves were almost normal.

Dr. R. L. MacDonnell gave an outline of the history of the case. The patient had had scarlet fever in childhood. There were no heart symptoms until he had arrived to the age of 40, when he had begun to suffer from dyspnœa, præcordial pain, and dropsy of the feet. During his illness there had been severe attacks of epistaxis. In one of these, the posterior nares on the left side had been plugged. This operation had been followed immediately by acute otitis media ending in rupture of the drum membrane. There had subsequently been an attack of acute renal congestion with the passage of bloody urine. The liver and spleen showed signs of enlargement, and there were evidences of congestion of both pulmonary bases.

Gonorrhœal (?) Endocarditis.—Dr. Johnston showed the heart of a man, aged 34, a stone-mason, who had died in Dr. Molson's wards. There had been a history of repeated attacks of gonorrhœa, the last commencing two weeks before admission. At the autopsy the lungs showed extensive chronic bronchitis, with slight bronchiectasis; and multiple small fibrous nodules scattered throughout the lung substance, each being surrounded by a zone of black pigment. The heart was dilated and the muscle wall of both chambers somewhat thick. A large rough,

ragged, fibrinous vegetation was found at the base of the middle segment of the aortic valve ; this was traced directly through the region of the membranous septum between the ventricles, and extended to the adjacent part of the tricuspid valve, upon which a similar vegetation existed ; the intervening tissue was softened and necrotic. The remaining portion of the aortic and tricuspid valves seemed perfectly healthy. The other valves looked normal. The heart muscle showed no change beyond slight fatty degeneration of some of the fibres of the papillary muscles. No infarcts or abscesses were found anywhere in the body. The urethra showed some thickening near the meatus and about the bulb, but was free from all appearance of acute inflammation. The right ankle and both knee-joints were examined and found normal.

Dr. Johnston was surprised to find, on making cover-glass preparations from the vegetations on the valves, that on staining with watery fuchsin a number of small diplococci were found, having a strong resemblance to gonococci in size and shape. They further resembled gonococci in not staining by Gram's method, others differing from all cocci which Dr. Johnston had found in previous cases of endocarditis. They were not obtained in cultures in pure agar-agar. On the other hand, while they sometimes occurred in small groups, of which each pair of cocci was slightly separated from the neighboring ones, they did not lie in the substance of the cells when these were present. They also stained less intensely than gonococci in alcoholic methylene blue solution. Scrapings from different parts of the urethral mucosa did not show any gonococci or organism at all resembling them. None of the other tissues were examined for bacteria. Dr. Johnston did not believe these organisms were proved to be gonococci, as possibly the peculiar staining might be due to degenerative changes in some other diplococcus. Still, as a case had been reported where gonococci had been described as occurring in the vegetation, the similarity, if not identity, of these organisms to them was of importance. He had not had any sterilized human serum on hand at the time of making this autopsy, and had not hoped for positive results from the cultures in any case.

Dr. MacDonnell, who reported the case, remarked that the patient had been admitted to Dr. Molson's wards in the Montreal General Hospital, on December 12th, 1890, complaining of cough, dyspnœa, and sleeplessness. There was a history of intemperance; no history of syphilis, but he had on several occasions contracted gonorrhœa, and had twice been under the care of Dr. Molson for gonorrhœal rheumatism. Six months ago the patient contracted a fresh gonorrhœa, which was followed by a fresh attack of rheumatism, the ankles, knees and wrists being affected. Apart from this affection he had not been in good health for some two months. He had lost weight, had shortness of breath and pain in the left side of the chest, and a distressing cough with free expectoration. He recovered from the attack of gonorrhœal rheumatism, exposed himself afresh to contagion, two weeks before admission, and the discharge had returned with increased vigor. There is no history of rheumatism or scarlet fever. Parents were both alive. One sister died at nine months of convulsions, one at 14 years of an acute illness lasting but two days, and a brother died at 30 of inflammation of the lungs. The present illness began two weeks ago with cough and dyspnœa. On admission at noon, Dec. 12th, 1890, the temperature was $102\frac{1}{2}°$, pulse 120 (weak), and respirations 48 (labored); cough distressing; deficient expansion on right side, with dulness on percussion and weak breathing over a considerable area at the back of both lungs from the angle of the scapulæ downwards, and mucous râles were heard over the whole back. Owing to the noisy breathing the heart-sounds could not be distinguished. Nothing was noted beyond accentuation of the second sound. Patient died suddenly at 3 A.M. next day (13th).

Dr. Bell asked if the gonococci had been recognized outside of the genito-urinary tract.

Dr. Jas. Stewart inquired if the joints had been examined in the present case for gonococci.

Dr. Johnston, in answer to Dr. Bell, stated that gonococci had been met with in cases of salpingitis and in gonorrhœal arthritis. To Dr. Stewart's question, he had not examined the joints for gonococci, as they appeared perfectly normal.

Case of Rhinoplasty.—Dr. Jas. Bell brought the patient before the Society and gave the following history: Five years ago, A. S., aged 25 years, lost the cartilaginous and soft parts of the nose, with the exception of a portion of the alæ at each side, from a destructive ulcerative disease said to have been lupus. An attempt was made in the London Hospital, England, to restore the nose by the Tagliacotian operation, the left forearm being used for this purpose, but resulted in a complete failure. On admission, portions only of the alæ were left of the nasal structures anterior to the lower extremities of the nasal bones. These were connected to the cheeks by large keloid cicatrices. The unsupported nasal bones had fallen down, so that the anterior edge of the vomer could be felt projecting between them. The inferior (free) margin of the vomer from which the triangular cartilage had been removed by the ulcerative process was covered by healthy mucous membrane. There was great redundancy of the upper lip, which was made more apparent by the spreading of the alæ nasi. The operation consisted in fitting into the gap described a section from the central portion of the upper lip. The edges of the gap were pared from above downwards, beginning at the centre. The mucous membrane was also pared from the free edge of the vomer. A section was then removed from the centre of the lip through its whole thickness, and about an inch in width at its free margin and three-quarters of an inch in width at the base of the flap. The flap was then turned upwards and fitted into the gap by making a cross section through the skin surface near the mucous edge of the lip and splitting it in both directions so that in its centre it was attached to the vomer, while externally the edges of the mucous surface were attached to the skin margin, the parings from which were reflected downwards and attached to the edges of the base of the flap, which formed the columna nasi. Union by first intention took place throughout, and an excellent result followed, with but slight shrinking of the implanted flap. In two months the mucous surface had become pale and resembled the skin so closely in other respects that it could only be recognized on careful examination.

Plastic Operation for Severe Burn of Face and Neck.—Dr. Shepherd exhibited a patient on whom he had operated for deformity of the neck and mouth, following a severe burn in infancy. The patient was 20 years of age, and when he entered hospital his chin and lower lip were fixed to the sternum, causing the whole head to be bent forward and obliterating the front of the neck. The burn had involved the greater part of the chest and also the sides of the neck and arms. The lower jaw, from continued tension of the scar, had been pulled forward and protruded several inches beyond the upper, giving the man a hideous appearance. Several operations were performed. The neck was first freed by a dissection which reached almost from ear to ear, and when granulation had been established, grafting after Thiersch's method was performed. The protruding lower jaw was then excised and the lip restored by Teale's operation. The result was good; the patient's appearance was much improved, and he could use his mouth.

Removal of an Osseous Body from the Knee.—Dr. Hingston exhibited a fragment of bone which he had removed from the knee-joint of a young man. The symptoms were similar to those commonly met with when loose cartilages are present. An open incision was made and the substance removed. On examination, it was found to be distinctly bony in structure. Its dimensions were about one inch by half an inch.

Dr. Roddick asked if there was any history of injury.

Dr. Shepherd remarked that the specimen looked like a fragment of bone sometimes found in gouty subjects.

Dr. Hingston replied that there was no history of injury or gout.

Chorea, its Relation to Rheumatism and Treatment.—Dr. G. A. Brown then read a paper on this subject, which appeared in the February number of this Journal.

Discussion.—Dr. MacDonnell considered the paper of practical interest. He referred to the great frequency of the rheumatic history, when looked for, in many cases of chorea. Rheumatism in children more frequently manifested itself by tonsillitis,

chorea, erythema, and various other manifestations of the rheumatic diathesis than by painful and swollen joints.

Dr. Jas. Stewart had no doubt but that rheumatism had a marked influence in the induction of chorea. He considered, however, that there was another element which predisposed to chorea, and that was a condition of instability of the nervous centres.

Dr. Mills spoke of the causes of chorea in dogs. These were mainly reflex and, in his experience, not dependent upon organic disease.

Dr. Gurd had found the iodide of iron with arsenic very beneficial in the treatment of chorea.

Dr. Johnston remarked that he had only met with brain lesions in one case of chorea out of about ten examined in man and animals. This was a case where he had performed an autopsy for Dr. Jas. Stewart, and a number of small cysts had been found in each corpus striatum.

Dr. Hingston had found ordinary chorea to disappear in seven or eight weeks without medicinal treatment.

Dr. Bell thought that the name chorea was rather indefinite, that it was made to include many cases of a definite pathological lesion.

Dr. Brown, in his reply, stated that he had wished to show the close relationship between rheumatism and chorea, nevertheless admitting that other causes may enter into its production.

Stated Meeting, 9th January, 1891.

F. J. Shepherd, M.D., President, in the Chair.

Ruptured Tubal Pregnancy.—Dr. Armstrong showed this specimen which he had removed from a patient aged 35. Her previous pregnancy, nine years ago, was followed by pelvic symptoms. She was then delivered of a full-grown child. In May last, the patient believed that she had had a miscarriage, as there had been a bloody discharge from the vagina for seven weeks. On the 5th April, five weeks after her

last menstrual period, whilst out walking, she was seized with severe pain and faintness, and had to be driven home. In two or three days she recovered sufficiently to be able to go about the house. On the 14th April she had another attack. On the 16th the patient felt better and went out, when she was seized with a third attack. Dr. Armstrong, who then saw the patient, found, on examination, the uterus pushed up and to the left. In the right side of the pelvis a large mass could be felt about the size of a cocoa-nut. The tumor extended above the brim of the pelvis, and could be detected by external palpation. There was a little bloody discharge from the vagina. The diagnosis was hematocele due to a ruptured tubal pregnancy. This was confirmed subsequently by Dr. Perrigo. The symptoms not being urgent, it was deemed advisable to await developments. The patient improved, and in a few days was up. She remained well until August, when chills and hectic fever set in, and the tumor felt considerably softer. On the 1st September Dr. Armstrong opened the abdominal cavity. The right Fallopian tube was ruptured and lay in the sac, which was filled with blood-clot. The sac was easily enucleated, and the tube ligatured and removed. The patient was now perfectly well. Dr. Johnston had examined the specimen, and found structures resembling chorionic villi. Dr. A., dwelling upon the etiology of the case, referred to her history of pelvic pain some nine years ago, when, possibly, there may have been desquamative salpingitis.

Dr. Wm. Gardner remarked that these cases were far from rare, and that they were not always fatal. In the present specimen the sac was somewhat remarkable. He wished to know if there were any evidence of ovarian structure in the sac. He had frequently found what he believed to be the ovary expanded by blood-clot.

Dr. Johnston replied that the ovary was free from the sac.

Dr. Shepherd wished to know what symptoms led to the operation.

Dr. Armstrong answered that from the softening of the tumor, together with signs of hectic fever, he had considered it advisable to operate.

Tuberculous Arthritis of the Knee-Joint.—Dr. Wyatt Johnston exhibited this specimen. Sequestra of necrosed bone existed at the head of the tibia and the condyles of the femur. The opposing surfaces of these sequestra were very dense, and showed eburnation.

Chalicosis.—Dr. Johnston also showed the lungs of a stone-mason. A large number of small, firm, fibroid nodules, the size of shot, were found beneath the pleura and throughout the lung substance. These nodules were gray in the centre, and were surrounded by a zone of black pigment. Analysis of the lung by Dr. Ruttan showed that 8.4 per cent. of the dried lung was composed of mineral ash, of which over 50 per cent. consisted of silica. Traces of iron were also present.

Thrombosis of the Superior Longitudinal Sinus and left Renal Vein following Scarlatina.—Dr. Johnson exhibited this specimen for Dr. Armstrong. The patient, a female child, aged 2½ years, had died six weeks after the onset of an attack of scarlatina with broncho-pneumonia. A large, firm, adherent, darkened thrombus completely filled the superior longitudinal sinus, and extended into the adjacent central veins. The brain was perfectly normal. The left renal vein and its principal branches also contained adherent red thrombi. The ovarian veins were not examined.

Dr. Armstrong related the clinical history. The child was two years and a half old. It had been delivered with forceps, and from within a fortnight of its birth it had suffered from convulsive seizures, which had occurred from once to six times a day. Various modes of treatment, including circumcision, had been tried without effect. The parents had persisted in the belief that the forceps was to blame for the unhappy condition of the child. Death was caused by scarlet fever and broncho-pneumonia.

Dr. Mills said that it was difficult to see how forceps could affect the sinus. He thought that more than the blood must be taken into account to explain the convulsive seizures.

Dr. Johnston remarked that thrombosis in the veins of children was not uncommon, especially in the renal vein which probably extended from the spermatic vein.

A Case of Abortive Typhoid Fever, with a Severe Relapse. —Dr. J. A. Springle related the history of the case. The patient, a young man aged 19, had consulted him on the 25th September last, with unmistakable symptoms of typhoid of about the seventh or eight day of the fever. On the following day rose spots were observed, and on the tenth day of the illness there was retention of urine. On the morning of the eleventh day the patient was extremely jaundiced, but was feeling quite well. His temperature, which had ranged between 100° and 102°, had fallen to $98\frac{4}{5}$°, and all the abdominal symptoms had disappeared. Retention of urine, however, persisted. This condition lasted until the end of the thirteenth day, when he recovered power over his bladder, and the jaundice gradually disappeared. His pulse and temperature had been normal since the eleventh day. His general condition was so much improved that he was allowed to partake of solid, though light food. He steadily improved, and on the seventeenth day was out for a short walk. On the eighteenth day he complained of not feeling well, and on the following morning presented all the symptoms of a severe relapse. For the first week of the relapse the fever ranged from 100° to 105°; pulse 100 to 140, markedly dicrotic. The spleen was enlarged, and there was great iliac tenderness; vomiting was incessant for forty-eight hours. Towards the end of this week hemorrhage set in, small in quantity at first, but subsequently becoming very profuse. There was considerable abdominal distension. During the following week there was vomiting, retention of urine, and a slight diarrhœa, which lasted forty-eight hours. A profuse rose rash was observed over the chest. The tympanitis, hemorrhage and other graver symptoms subsided towards the end of the week. From the end of the third week the patient progressed favorably. The total period of the pyrexia for the relapse was thirty days. Dr. S. could not explain the coincidence of jaundice, furthermore than the patient had had fever and ague five years ago, and, since then, his skin had at times been discolored, but not of the decided tint observed in this illness.

Dr. MacDonnell considered this case an interesting one. That many cases of abortive typhoid were put down as febricula, he had no doubt. Jaundice in typhoid fever was not rare, though not often seen here. He mentioned a case of a patient in the hospital, who developed jaundice after a relapse of typhoid fever.

A Method for the Quantitative Estimation of Acetone in Urine.—Dr. Ruttan, in referring to the various methods of detecting acetone in urine, said he had no hesitation in recommending Leben's iodoform test as superior to all others both in the delicacy of the reaction and in the ease with which the test could be applied.

If much acetone be present it can, with little experience, be detected by applying the test directly to the filtered urine. This method is rendered more delicate by first precipitating the earthy phosphates by caustic soda or potash, and then applying the test. The test consists in adding to the urine a few drops of a strong solution of iodine in potassium iodide, and then adding an alkali (caustic soda, etc.) until the solution is just decolorized. A yellow opacity with precipitation of iodoform occurs if acetone be present. Nothing else that occurs in urine, except acetone, is able to give this precipitate of iodoform without warming.

When but minute traces (less than 0.05 per cent.) are present, the urine should first be made acid with sulphuric acid and distilled. When half the urine has been distilled, all the acetone has been found to be in the distillate.

He then demonstrated the application of a piece of apparatus he had constructed to use in connection with his method of determining the quantity of acetone in urine. This method depends on the fact that with the same quantity of iodine and alkali, variations in the quantity of iodoform produced in Leben's test are caused by a proportionate increase or diminution of the acetone. He used 5 c.c. of a standard strength of iodine, 10 c.c. of similar strength of caustic potash, and 1 c.c. of the distillate of the urine to be tested. The iodoform produced is dissolved up by shaking the mixture in a sort of separating

flask with pure ether, then the aquaous mixture below is run out, and the etherial solution measured in the flask as it is graduated from the tap up. Half the etherised solution is run out on a weighed watch glass and allowed to evaporate at ordinary temperature. The iodoform left is weighed, and the quantity so obtained multiplied by 0.55 will equal the acetone in 1 c.c. of the urine.

In a chemical laboratory from forty to fifty estimations could be made in a day, and the percentage of acetone determined to the third place of decimals with perfect accuracy.

Acetonuria.—Dr. Ruttan and Dr. Wyatt Johnston read a paper upon a fatal case of cerebral apoplexy, in which sugar and acetone had been detected in the urine.

The patient, a man aged sixty-seven, had been under the care of Dr. R. L. MacDonnell, who had been his medical attendant for the last seven years, and had repeatedly examined the urine during that time, always with negative results. The fatal illness had set in suddenly with an apoplectic seizure. Coma had set in immediately, and had lasted for twenty-four hours. The urine was found at the time of the seizure to contain 1.7 per cent. of sugar, which had increased next day to 2.4, and then had disappeared entirely. Acetone to the amount of 0.31 to 0 37 per cent. was found associated with the sugar, and the quantity had persisted for five days after the sugar had disappeared.

The patient had partially recovered consciousness, and had complained of severe occipital pain. Death had occurred suddenly and unexpectedly on the twelfth day of the illness. The condition had been regarded as one of diabetic coma, but at the autopsy an extensive cerebral hemorrhage was present, involving the whole of the base of the brain, but most extensive over the medulla. Dr. MacDonnell concluded from this instance that in every case where there is sugar in the urine it was not necessarily a case of diabetes.

Dr. Mills said that the present case appeared to him like one that was being gradually poisoned from some retained substance in the body, which was unknown to us, and deranged metabolism generally.

Dr. Johnston stated that in view of the post mortem, poisoning by acetonuria could not be regarded as being the cause of any of the symptoms. The hemorrhage had produced both the coma and the acetonuria. The blood obtained at the autopsy was free from acetone. The death was probably due to a recurrence of the hemorrhage.

Dr. Ruttan thought that the urine of patients suffering from coma should be examined for acetone, as well as for sugar and albumen.

Stated Meeting, January 23rd, 1891.

F. J. Shepherd, M.D., President in the Chair.

Epithelioma of the Mouth.—Dr. Johnston exhibited this specimen for Dr. Bell. The tumor, the size of a walnut, was situated behind the symphysis of the lower jaw. The surface was ulcerating. The growth infiltrated the submucous and muscular tissue in its neighborhood, and had extended into the periosteum. Microscopic examination showed the growth to be an epithelioma. At the autopsy, performed four days after the operation, the wound was granulating. No thrombi were found in the vessels of the neck or the pulmonary arteries. The lungs showed a patch of acute pneumonia, as large as an orange, in the upper lobe of the left lung. At the right apex was an extensive fibroid area, evidently of tuberculous origin, in the centre of which was a small cavity the size of a cherry, with smooth walls, communicating directly with a bronchiole. There were no signs of food in the air passages.

Dr. Bell briefly related the history of the case. The patient was 59 years of age, an old soldier, and a smoker. His trouble dated back to May last, but it was only in August that his mouth became sore. The patient's condition was rather poor. There were signs of old tubercular disease at the upper lobe of the left lung. The patient died on the morning of the third day after the operation, somewhat suddenly, from an apparent syncopal attack.

Dr. Johnston believed the cause of death to have been septic pneumonia, without any mechanical cause.

Hæmatocele of the Testis.—Dr. Bell, who showed this specimen, remarked that it had come on suddenly, in one night, whilst the patient was ill in bed. The tumor had been tapped at the hospital, and a cellulitis of the scrotum had followed. Dr. Bell made an incision into the scrotum and found the visceral layer of the tunic dilated with blood-clot. On section, the testicle was found considerably injured by pressure. Dr. B. remarked that it was unusual to find hæmotocele without any history of traumatism.

Dr. Roddick agreed with Dr. Bell as to the rarity of cases of hæmatocele without traumatism. When this case had been tapped, a grumous and bloody serum escaped which led Dr. R. to believe that a cyst had been punctured, particularly as the testicle could not be felt.

Multilocular Cyst of the Ovary.—Dr. Lapthorn Smith showed this specimen, which weighed 45 lbs., which he removed from a woman aged 31. There were a great many adhesions. Hemorrhage had been very profuse during the operation, and the abdomen had to be reopened the following day owing to a recurrence of the hemorrhage, due to a small fissure between two segments of the pedicle. The patient was very weak from the loss of blood, and died three and a half days after the operation.

Dilated Tubes.—Dr. Smith also exhibited this specimen, on which he would report at a later date.

Bone-marrow and Liver; Pernicious Anæmia.—Dr. Johnston showed the femur of a man, aged 50, who had died in Dr. Molson's wards from pernicious anæmia. The medullary canal was filled with red lymphoid marrow, except in the lower third, where traces of the fatty marrow still existed. The liver, from the same case, showed a large amount of yellow-brown pigment in the peripheral zone of the lobules. This pigment gave a marked iron reaction on treating the sections with ferro-cyanide of potassium and hydrochloric acid. The skin and subcutaneous tissues were stained a lemon-yellow tint. Numerous nucleated red blood corpuscles were found in the blood.

Plastic Operation for Extrophy of the Bladder.—Dr. Shepherd exhibited a case of extrophy of the bladder in a boy aged

12, on whom he had operated, and restored the anterior wall by Maury's operation. A large oval flap was first taken from the perineum and fixed beneath a short flap dissected from above. After union had taken place, the sides of the flap, which were unattached, were further dissected down and fixed beneath short lateral flaps. In the first operation, a hole had been made in the centre of the perineal flap for the rudimentary penis. The parts all united well except at the upper part, where a small portion sloughed and allowed urine to exude, and so prevented skin-grafting being to any large extent successful. This fistulous opening had, however, been closed by a recent operation, and now the bladder was completely covered and the parts had all skinned over. The boy was able to retain a couple of ounces of urine, and the double hernia which had previously existed as the parts contracted was completely cured.

Dr. Roddick considered the operation admirable. He had operated on a young woman some years ago for extrophy of the bladder, and had selected Ayer's method. A large square flap had been dissected from the abdomen above the bladder and turned down with the cuticular surface innermost. The raw surface was subsequently covered over by lateral flaps. The operation thus far had proved very successful. The patient left the hospital with the intention of returning in a few weeks to have the operation completed. She failed to do so. It was learned that she had got married!

Study of Koch's Treatment in Berlin.—Dr. G. T. Ross read a paper on the above subject, which appears in the present issue of this Journal.

Brief reports of cases submitted to Koch's treatment in the Montreal General Hospital, which are being published in this Journal, were made by Drs. Roddick, MacDonnell, Jas. Bell and Johnston.

Dr. Roddick was not yet convinced that the results would be as good as predicted. He agreed with Dr. G. T. Ross that the remedy was a dangerous one, and that all experiments should be made in hospital.

Dr. R. L. MacDonnell stated that, recognizing the respon-

sibility resting upon those who, occupying positions in public institutions, were entrusted with the experiments with the Koch fluid, he had endeavored to fulfil his duty towards the profession and the public. The profession regard with eager interest the result of the work. It was therefore necessary that the members of it should be put into full possession of all the facts of the cases on trial and the records of the observations made. The profession could then judge fairly of the result. Towards the public, it was the duty of those using the fluid to use the utmost caution. To pronounce a decided judgment upon the merits of the treatment was not possible, and therefore the members of the profession should be slow in the expression of opinion on the matter. Unless care were taken, the Koch treatment would develop into a form of cruel quackery. He had endeavored to secure cases in which (1) the diagnosis was beyond a doubt; (2) cases which had been under observation previously, so that a just comparison of their condition before and after treatment could be made. Three cases were selected, and the treatment was commenced on the 12th January :—

Case 1.—A boy of 18, who had been six weeks in hospital in the early autumn. The temperature had always been normal, or nearly normal, never having reached 100°. The symptoms were debility, loss of weight, cough. The physical signs were indicative of consolidation at the right apex, involving the upper third of the lung, and commencing consolidation of the left. Tubercle bacilli and elastic tissue in the sputum. For a week before the injections were made the temperature was taken hourly. It never went as high as 100°. The result of the treatment has been little more than negative. A reaction has occurred, inasmuch as it is plain that the temperature rises to a point higher than was observed before, after each injection. Up to date, Jan. 23rd, the patient observes no change. The physical signs are unchanged. The sputum has been examined every day, but no change in the number of bacilli has been noticed. The patient has lost weight since he had been under treatment.

(*To be continued.*)

THE

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MEDICAL EDUCATION IN THE UNITED STATES AND CANADA.

The Secretary of the Illinois State Board of Health's Report on Medical Education in the United States and Canada for the year 1891 has been issued. This always interesting volume has probably done more than all other measures combined to promote the cause of higher medical education in the United States. Previous to 1868, there was not a single medical institution in that country which required or had provision for more than two years medical study.

Out of the 111 medical schools now in existence in the United States, 90 require more than a two years' course of study. There are 34 medical schools that require, or will do so within a short period, four years study, and three courses of lectures. There are only 4 schools that require four courses of lectures.

The statistics quoted is evidence of the great advancement made by our neighbors in their medical educaqion.

There are 13 medical colleges in Canada, the great majority requiring an attendance of four winter sessions. We hope soon to see four years collegiate attendance compulsory in all our medical schools in Canada. Only one college requires more than four winter sessions. Dr. Raueh, in directing attention to the defects in the American system of education, refers to the lack of a sound preliminary education; to the superabundance of didactic lectures, and paucity of clinical and laboratory work, and to too short courses. As far as Canada is con-

cerned, our great defect is too many didatic lectures and too little laboratory work. The preliminary training of those who enter is probably equal to that of the most progressive European countries. The clinical teaching and requirements compare also favorably. As to the shortness of the course, all who intend practising in any of the provinces are required to attend four full collegiate years, but some of the schools do not require four years attendance at college from those presenting themselves for their degree.

The Ontario Medical Council, it is reported, are about taking steps to lessen the number of didactic lectures and increasing the laboratory and clinical work. Should they succeed in effecting this it will probably stimulate the medical boards of the other provinces to do likewise, and the result will be a great boon to the over-lectured Canadian medical student.

KOCH'S TREATMENT OF TUBERCULOSIS.

As experience accumulates relative to the value of Kochine, it is becoming clear that it is far from being either an agent useful for diagnostic purposes or for the cure of either local or general tuberculosis.

It is not uncommon to meet with cases where neither a general or local reaction follows its employment, and already numerous cases have been recorded, where it has worked mischief.

Prof. Drasche, of Vienna, recently exhibited a patient with tuberculosis of the tongue, before the Society of Physicians of that city, after several weeks treatment, the only change noticeable was a marked extension of the infiltration. If any form of local tuberculous disease is amenable to this treatment, we should think such would be a case of tuberculosis of the tongue.

Prof. Drasche referred to the results in the treatment of twenty-two cases of pulmonary tuberculosis under his care. In a few cases in the early stages symptoms of improvement were noted. In some, on the other hand, there was a decided change for the worse, setting in so promptly after the injection

as to unfortunately leave but little room for doubt as to the cause. In the advanced cases, without exception, the symptoms, both general and local, became more marked. Dr. Drasche has good reasons, therefore, for concluding that Kochine is not a cure for phthisis in either its advanced or primary stages.

Bouret and Jeamel * describe a case of quiescent tuberculosis of the right lung in a man, aged 22, which, after a single injection of 0.001 of the fluid, was followed by severe and repeated hœmoptysis. Death took place twelve days after the injection. At the post mortem several fresh pneumonic infiltrations were found in the right lung, the central portions of which were broken down (*broncho-pneumonia gangrœnosa*). In one of these cavities a considerable quantity of fresh blood was found, and this was, according to the authors, the origin of the hœmoptysis. In the bases of both lungs, and throughout the entire extent of the left lung, there was found numerous submiliary tubercules. Besides the above reported cases, numerous others might be cited, showing the untoward effects of this powerful agent.

On the other side we have the evidence of very able and competent observers, pointing out the value of Koch's liqnid. Neisser, Ziemssen, Esmarch, Sonnenburg, and many others have adduced evidence which at least goes to show that the remedy is not without a marked benficial influence in some cases. It is questionable whether an actual cure has been proven, even in lupus cases. Both Hutchinson and Kaposi are doubtful on this point. We will, therefore, have to wait for some time before coming to any definite conclusions as to the value of this agent.

No one can, however, read an account of recent experiences without feeling the great responsibility assumed, when any patient, even a lupus case, is advised to submit to this treatment.

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* La Semaine Medical, No. 4, 1891.

Medical Items.

— The term "Tuberculin" is now applied to Koch's fluid.

— Prof. Sattler, of Prague, succeeds to the chair of Ophthalmology in the University of Leipzig.

— The authorities of the Warsaw hospital have forbidden the further use of Koch's liquid in that institution.

— Dr. Angerer has been appointed to the chair of surgery in the University of Munich, vacant by the death of Nussbaum.

— Prof. Jolly, of Berlin, has had under his care two cases of temporary delusional melancholia as the result of the Koch treatment.

— In Berlin and Dorpat experiments have been made to determine the diagnostic value of Koch's lymph in bovine tuberculosis, and it is said with success.

— No definite, favorable changes of a permanent character have been noted in any of the twelve cases of external and internal tuberculosis treated in the Montreal General Hospital by Koch's liquid.

— The number of students attending the different faculties of the University of Berlin amount to 5,527. Berlin heads the list of German universities, while Rostock is at the bottom, only 371 being in attendance. Nearly 30,000 students are in attendance at the twenty universities.

— Dr. Henoch, of Berlin, has little faith in the value of the Koch treatment in the tuberculosis of children. After having treated twenty cases in this way, he was uncertain whether it was wise to continue doing so any longer. Not one case reported cured, and not one improved, except one which subsequently relapsed into a worse state.

— It is with deep regret that we record the death of James McIntosh, M.D., of Vankleek Hill, Ontario. Dr. McIntosh graduated in McGill University in 1859, and has always practised in Vankleek Hill. He was a man that was universally respected. In addition to attending to the ever-pressing claims of a large and arduous country practice, he was always an active worker in general educational matters.

Preliminary Programme of Sixth Annual Meeting of the Association of American Physicians, to be held in connection with The Second Congress of American Physicians and Surgeons, at Washington, D. C., September 22nd, 23rd, 24th and 25th, 1891 : —

1. The President's Address — Wm. Pepper, Philadelphia.

2. Discussion on the relations between Arterial Disease and Visceral Changes — *Referee*, Geo. L. Peabody, New York. *Co-Referees*, James K. Thatcher, New Haven, Wm. T. Councilman, Baltimore.

3. Discussion on the Remote Results of the Removal of the Ovaries and Tubes — *Referee*, Wm. T. Lusk, New York; *Co-Referee*, Wharton Sinkler, Philadelphia.

4. Discussion on the Treatment of Visceral Tuberculosis by Koch's Method. Reports by Francis P. Kinnicutt, New York; Harold Ernst, Boston; Wm. Osler, Baltimore, and Commission of University of Philadelphia, reported by Drs. Musser and Griffith, Philadelphia.

5. Experimental Studies on the Causes of the Localization of Pulmonary Phthisis, and Certain Other Infectious Diseases in the Lungs — J. West Roosevelt, New York.

6. The Relation of Drinking-waters to Disease — Henry P. Walcott, Cambridge.

7. Intestinal Perforation in Typhoid Fever — R. H. Fitz, Boston.

8. On Changes in the Red Blood Corpuscles in the Pernicious Anæmia of Texas Cattle Fever —(By invitation) — Theobold Smith, Washington.

9. On the Diseases of the Kidney, popularly called "Bright's Disease" — Francis Delafield, New York.

10. The Use of Albuminous Food in the Diseases of the Kidney — Wm. H. Draper, New York.

11. Bradycardia in Acute Articular Rheumatism — I. E. Atkinson, Baltimore.

12. The Treatment of Epileptiform Neuralgia — James Stewart, Montreal.

13. The Condition and Prospects of the Library of the Snrgeon General's Office, and its Index Catalogue — John S. Billings, Washington.

THE

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Original Communications.

LIFE INSURANCE.

BY GEORGE WILKINS, M.D., M.R.C.S., ENG.,
Professor of Medical Jurisprudence and Lecturer on Histology, McGill University.

(Read before the McGill Medical Students' Society, February 28th, 1891.)

GENTLEMEN,—The chief object that you and all true lovers of the science of medicine have in view in pursuing your studies at this University is the relief of suffering and the prolongation of life. Apart from this, our calling at times, involuntarily or not, places us in the position of aiding the administration of our laws, as well as in the protection of capitalists and others in the administration of beneficial associations or institutions. It is to the latter I wish especially to direct your attention this evening, in attempting to define the relation of the medical man to life insurance associations.

We must, therefore, in the first place, endeavor to ascertain the object of these associations, in the proper organization of which the conscientious and intelligent medical man is an important and useful functionary.

At various times within the last one hundred years calculations have been made, based on the entire population of a city or country, as to the number of births and deaths occurring therein, and from these calculations tables have been formed giving the number of years that individuals of any age may be expected to live. For a long time these calculations were relied upon as a basis of a contract by which an association of capitalists calling themselves a Life Insurance Co. guaranteed to pay the repre-

sentatives of any certain individual a fixed sum at his death, in consideration of that person paying yearly, during his lifetime, certain definite sums according to his age at the time of forming the contract. As none of the insurance companies would take manifestly bad lives, the annual payments, based on such general calculations as those first-named, were enormously high. New companies sprang into existence with lower rates, the result of calculations based on selected lives. It was found that by selecting individuals free from physical ailments of any kind, in whose family—ancestral or present—there was entire absence of any hereditary taint, and whose occupation was not injurious ; that lives such as these would, on an average, live a much longer time than was given in the tables of earlier date ; and that consequently insurance companies would be able to insure such persons at very much lower rates.

Here it is that the services of the physician are of paramount importance. He it is that is relied upon to select the life and say whether or no it is a fit risk for the company to accept on some plan. Should he say the risk is not a safe one for insurance, giving, of course, good reason for his opinion, the risk will be at once declined. Should he consider the life a first-class one, and advise its acceptance, the medical referee and the actuary of the company will, by their combined experience, carefully consider the report of the medical examiner, reviewing the family as well as personal history of the applicant, taking into consideration his habits as regards the use of alcoholic beverages, and forming their own opinion as to the expectation of life. Their decision in regard to this will be acted upon whether it agrees or not with that of the medical examiner. Nevertheless the company will base their judgment on the answers to the questions put by the medical examiner to the applicant, as well as upon his own report of applicant's state of health. Indeed, it more frequently happens that rejections are the results of replies by applicant to questions put to him by the physician than of the report of applicant's present condition. Consequently the examination is not simply a scientific investigation of the applicant's present condition, but is one requiring tact and conscientious

principles. The scientific part of the examination is what you are now qualifying yourself for in pursuing your course here. But you will need more than that to be a useful officer for any company. To make a suitable report you must have a profound sense of professional duty as well as a complete independence of character. With both of these qualities you will be able to put to applicants certain questions which the experience of the various insurance companies has taught them to be the most useful in eliciting the antecedent history of applicants, in such a manner as to convey such answers as will best aid the chief officers of the company in estimating the value of the risk. For instance, it may so happen that an individual, aged say 22, states he had a sister die of childbirth. Having the interests of the company (your employer) in view, you make further inquiries and discover that this sister died eight or nine months after giving birth to a child, that some lung trouble which had evidently been latent revived; that at about the time of birth of child patient began to lose flesh, and upon close inquiry you found she did have cough for a few weeks or months previous to death. All these very important facts you have made out on careful inquiry; further, your questioning may have elicited the additional fact that an aunt or an uncle died, say, at 40 years of age from consumption. Here at once is a very hazardous risk which an unprincipled physician might easily cover up were he so disposed. Such a risk as this would be an extremely undesirable one for any company, although applicant might himself appear to be in every way a first class life. Take one hundred such cases and one hundred lives in whose family is no trace of any lung disease, and the company, I have no hesitation in saying, will receive at least 30 per cent. more premiums from the latter than from the former.

Without complete independence and honesty of character it is impossible for a medical man to serve the interests of the company. You must remember that a large amount of capital is invested in these institutions. They hold a position only secondary to the great railway and banking interests in this country and the United States. In the latter country especially men insure

their lives for enormous amounts. A very few badly selected lives might do almost irreparable damage to even a strong company. Not only will the admission of bad lives deprive the stockholders of their justly earned dividends, but also seriously affect the policyholders, since by a wise provision of most forms of policies the insured are made participators in the profits of the company, which may be utilized for lessening the amount of their annual payments, or may be allowed to accumulate and a proportionally much larger amount be added to the total sum assured. Badly selected lives will lessen the amount of these profits. Not only that, but individuals who have policies in a company and happen to know that some one else of whom they have heard, who is reported to be a bad risk either from drinking habits or impaired health, is insured in the same company with them, and fearing and doubting the stability of such an institution, will hesitate taking other policies in that company. Or, again, agents of other companies will utilize such cases in favor of their own to the prejudice of the company that has taken the impaired life, if that life has been taken in ignorance and without extra rates.

These cases are the ones that try the probity of the medical examiner. If he makes a faithful report to the company he will run some risk of offending the applicant and his family, although I can call to mind that one of my best paying families is that of a gentleman whom I met for the first time some years ago and rejected on account of some heart trouble. Shortly after that I became his family physician, and have been so ever since. Yet I must confess it is too frequently the case that the physician will suffer in the personal estimation of the rejected one.

Nevertheless, in cases such as this you are not likely to be the losers financially. The independence manifested by you in reporting to the company the unfavorable as well as the favorable points in the personal or family history of the applicant you have examined will not be lost sight of by the company, and any honorable and healthy company will see that you do not suffer by being passed over and the examination made by some confrere with a more elastic conscience. All strong companies,

whilst anxious to do business, can be sufficiently independent to require applicants from your locality to pass muster before you.

When you see an insurance company represented in a limited district by a number of medical examiners, you may rely upon it that the interests of that company are not as well looked after as they might be. It is equivalent to a bid for lives which are not first class.

Let me put you upon your guard in an important direction. In all applications for life insurance, one of the questions put to the applicant is whether he has ever been refused by any company. It unfortunately frequently happens that the applicant deliberately lies and says no; at other times, whilst being incorrect in replying in the negative, he may have been under the impression that the application had never reached the head office, or possibly he was advised to withdraw. Nevertheless it did reach the office, and was there recorded amongst the rejections. In such case a notice is immediately sent to all the other insurance companies who are in the combine to that effect, and is there registered by them. Before a policy is issued by any of these companies the register of rejected risks is looked up and the company that rejected asked to furnish information giving reasons for its action. I have frequently seen it happen that in such a case a previous medical examiner had rejected because applicant had a heart murmur that was overlooked by last examiner, much to his chagrin when he hears of it later on, as you may rest assured he will. Or perhaps the previous examiner, by means of closer questioning, had elicited objectionable facts in the personal or family history which had been duly reported by him to his company. A copy of this report is presented to the other companies to which applicant may apply. Of course oversights such as these will be greatly to your prejudice, and show the necessity of making a careful examination of such important organs as the lungs and heart, as well as of the urine.

It will always be your duty to state facts in making your report on the printed form, but as it generally happens that the agent who convassed the applicant may require you to give him the report, you are at liberty to do so. It may not, however,

always be advisable in such a case—where the application is not sent by you direct to the head office—to fully explain your opinion on some points. A man will probably reply that he is temperate in his habits. You and the head office may have different views of the quantity of stimulants that an individual may take and be "temperate." Both you and the company may think otherwise either through personal knowledge or through reports, or from the quantity which he tells you he drinks daily. It may not be advisable in these cases, where it goes through other hands, to state fully your opinion of his habits; but your duty will be to write at once to the head office stating you examined Mr. So-and-So, and that he states he averages daily a certain amount of beer or spirits, as the case may be, which is injurious, and leave it with the company to decide as to the value of the risk. Such a letter marked "private" will be respected.

As by far the largest proportion of death claims arise from lung diseases, and too often from a chronic form, some of which might have been avoided by more careful examination of the applicant or enquiries either into his personal history or that of his family, it is advisable that you should not only most carefully examine the lungs in every case, but also inquire into applicant's personal history as well as that of his family. I am fully convinced that heredity has a most important bearing in transmission of consumption. I am equally convinced, as I think most practical physicians of the present day now admit, that it is also eminently infectious. Indeed I am of opinion that the latter is the more important of the two. Where there are no bacilli there is no consumption. I should think that most of those who die of that disease, say after puberty, were free from bacilli at birth, therefore they must have become infected after. If you closely examine the history of those suffering from phthisis in a hospital, you will find that some of them have coughed for years, and possibly lost flesh—although consumptives do not always waste. Examine a little more closely and you may discover that a brother or sister or a parent had died of it after having expectorated for years—which means an immense number

of dried tubercle bacilli floating in the atmosphere of that house. From some dried expectoration some of these light upon suitable soil—suitable possibly through inherited feebleness of constitution only. After the lapse of a shorter or longer period, they take root and grow; it may be rapidly or extremely slowly; with the result of a death claim upon some insurance company. Some of these very slow cases permit the individual to pursue his vocations until the disease has far advanced; a cavity enlarging towards the surface of the lung lights up inflammatory trouble all around its immediate vicinity, which means a local pleurisy; often that is the first symptom that actually inconveniences the individual, and it is for that he seeks relief. Shortly after he dies; a certificate of death follows, giving pleurisy as the cause. It may be that numerous small cavities encroach more internally, lighting up inflammatory trouble about the bronchi. The patient dies with troublesome cough, and bronchitis is here assigned as the cause of death. In questioning applicant he may indignantly deny that consumption was ever present in his family in either of above cases, and be at the same time truthful and incorrect.

These are the cases in which it is of the greatest importance that you should use your tact in discovering, if possible, how long relatives who died from these ailments had been "out of sorts," how long they coughed, or had been losing flesh—all of which you will faithfully report to the head office.

Proportion of weight to height of body is of some importance. All companies will furnish you what they esteem the average weight of first-class lives—tables formed from their own experience or that of others combined with their own. Below the average weight, with any taint of chronic lung trouble in the family, is a decidedly objectionable feature, and one that should be enquired into. It is possible that it may be a family characteristic; in which case, if they are long livers, it will not be of as much importance. On the other hand, you must not be carried away by the other extreme—that above weight will remove objections due to family taint. Those of you who followed my clinic last summer cannot help having observed some patients in my wards who were considerably above average weight—who eat

and drank well, yet had a troublesome cough associated with some of the physical signs of phthisis. Such cases as these should put you on your guard, not to carelessly examine any man because his appearances are first-class.

Loss of weight under any circumstances, if to any great extent, especially if approaching the prime of life, or if associated with long-continued dyspepsia, is a matter that requires the minutest investigation. Every report of medical examination, besides stating applicant's present weight, should also state whether or no he ever weighed more—if so, giving full particulars as to how much, when, and supposed cause of decline in weight; also the period of time that applicant has been his present weight. A full report of these particulars is often of the greatest use to the head office in estimating the desirability of the risk.

We are, most of us, disposed to consider ourselves good, healthy lives, and when asked in a general way if we have ever had any disease of any kind, to reply in an equally general way "nothing except children's diseases." Put a question in a more definite form, thus: "Have you ever been confined to bed from any cause?" On many an occasion I have seen that question bring out answers that have important bearings. An individual says, "Yes, I was confined to bed three days five years ago with a slight bronchitis, and again a day or two with a 'cold' a year ago." In reply to another question you put him, such as "Have you ever consulted a medical man regarding your health, and when?" He replies "yes, but only for slight colds." This may be of no consequence, but if any of his family have died of any chronic lung trouble, or are at that time suffering from it, an individual with such a personal history might not be considered first-class. These replies may show possibly quite correctly that his illness thus reported was of no consequence, but they might also be interpreted as showing that he was himself of the opinion that slight ailments of that nature required careful nursing on account of family taints. Deficient weight or loss of weight, with such a history, would exercise a very important influence in assisting the head office to determine whether or no they ought to accept the risk.

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INSOMNIA.

While Insomnia or inability to sleep is not a distinct disease, it is at times productive of much distress, and interferes so seriously with the proper performance of the functions of the various organs of the body, that the best efforts of the physician are demanded for its relief. Insomnia is generally the result of prolonged mental study or intense excitement. At other times it is due to the action of malaria upon the nervous system. It not infrequently follows the excessive use of tea, tobacco, alcohol, etc., due to arterial and nervous excitement caused by these agents.

Pathologically all cases of Insomnia can generally be divided into two classes, as that which results from nervous exaltation, characterized by an increase in the force and frequency of the pulse, and that which results from nervous depression, with a diminution in the volume of the pulse, often followed by an anæmic condition of the Cerebral Arterioles. The treatment to be successful must vary with the cause or pathological conditions present. Physicians are well aware that Opium, Chloral, Alcohol, etc., are often used and sometimes give relief, but the patient becomes habituated to the drug, must have the dose increased, and thereby a habit is formed for which the best efforts of the physician are called in to check, a habit which is worse than the sleeplessness for which the patient was treated.

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You will have observed that most of the points I have touched upon are matters of report to you on the part of the applicant for life insurance. The report is made to you for three reasons. In the first place, you are the only one qualified by previous study and experience to interpret the bearing of his replies on other points in his past history that may arise. Secondly, an individual will freely answer questions you may put to him which he would consider impertinence on the part of another. And lastly, but by no means the least, his replies may cause you to direct your physical examination more closely to some organ than you might have otherwise done.

Provided the applicant himself is a first-class life, personally, never had any disease likely to impair his life, and passes by some years what his family history has shown to be a critical period in the lives of those members of his family who have died with a so-called hereditary disease, it is quite possible that some insurance companies will accept the risk with certain extras. It does not always follow that because a man happens to have lost one or two members of his family from consumption that he will be rejected. If he is exceptionally good personally, with a very favorable occupation, one company may offer him what is called an endowment policy—that is, one for a limited number of years, say 10 or 15, at the end of which time, if he lives, he will draw the money himself; in the meantime payable on his death. Another company may "load" him; that is, say he is 35 years old, with an expectation of 32 years, they may load him 10 years (expectation 24 years), in which case he pays the same premium as though he were 45 years of age, which, of course, is considerably heavier than the previous age. Another company may offer him a policy with a "lien," reducing it a certain sum every year; that is to say, a man, say 45 years of age, wishes to insure on the "all life" plan, paying a certain sum yearly. He is quite certain himself that he is a good life, and probably he is, but, unfortunately, one parent died at, say, 40, of consumption, and a brother or sister at 25 of the same disease. Weight and everything else being very favorable, I think an assurance company would be quite justified in accepting

such a risk, with a lien of, say, $500, decreasing every year by $25. By this plan the applicant himself takes part of the risk for the first few years. In this way, although he pays the rate on, say, $1,000 insurance, should he die before the second payment is due, $500 only will be paid to his representatives; but for every yearly payment he makes, the amount payable at death increases by $25, until the "lien" quite disappears, if he survives the expectation at his age.

As medical examiners of a company you, however, will have nothing to do with any such arrangements as these. I mention these points merely to show the importance of the examiner being minute in his replies and exercising sound judgment as to the nature of the replies that require these minutiæ. Neither will you have anything to do with the amount for which any one is applying for insurance. All require the same care. Some wily individuals who may feel somewhat shaky as to their passing an examination may apply purposely for a small amount, thinking either the examiner or the company, one or both, may not be so particular in making inquiries, or in the examination of the risk, and then pass. A short time after, within a few weeks say, they apply for an additional policy, which might possibly be granted simply on certifying that he is in a sound state of health, and that there has been no change in his family or personal history since last examination.

What I have already mentioned are only a few of the principal points which my experience as chief medical officer of a large and prosperous insurance company I have considered the most desirous that should be fully impressed upon you. I merely hope that all of you may become medical examiners to some first-class insurance company. Some of you, I feel certain, will. I feel equally certain, from what I know of you, that you will sustain the reputation of your Alma Mater by doing your duty to those who may make use of your services.

THE RELATION OF LESIONS OF THE EYE TO CONSTITUTIONAL AND ORGANIC DISEASES.*

By J. W. Stirling, M.B., &c.
Surgeon Oculist to the Metropolitan Dispensary,

Gentlemen,—The subject of my lecture is one of much importance, and of such a wide scope, that I must needs generalize and curtail in order to bring the subject matter within reasonable limits.

In the words of Hughlings-Jackson, "The best and most hopeful feature of ophthalmology is that it has relations, closer or more remote, with every branch of medicine and surgery—indeed, with almost every branch of science."

On the structure of the eye it is unnecessary for me to dilate, but I wish to draw your attention to the subject of the development of the eye as having a very marked bearing on the relation of its lesions to those of the other parts of the human frame.

As you know the primary optic vesicle is an outgrowth from the proseucephalou towards the outer epibastic covering of the head. This ball-like growth soon folds in on itself at the apex, forming a sort of cup, the cavity of the cup being the secondary optic vesicle, the inflected part is the retina, while the posterior part is the choroidal epithelium. The stalk becomes the optic nerve.

At the under surface of the depression there is a slit — the "choroidal fissure" — which permits some of the mesoblast to give access to the interior of the eye. This slit forms the coloboma, which we occasionally see traces of in the fundus of the adult eye ; it is prolonged back to the optic nerve, and contains the central artery of the retina. The margins of the coloboma afterwards unite completely, with the rare exceptions I have just mentioned, in which it persists.

The lens is formed by an ingrowth or bud of the epiblastic covering of the head into the cup or depression above mentioned. This separates eventually from its epiblastic original layer. Then

* Read before the McGill Medical Students Society, February 14th, 1891.

the epiblast layer covering in the front of the vesicle becomes the corneal stratified epithelium.

The substantia propria and descemal layer of the cornea are of mesoblastic origin.

We thus see that, developmentally considered, the eye is composed of epiblastic and mesoblastic tissue. Now the tissues which are of epiblastic origin are related to the epidermal tissues of the body, and those of mesoblastic to the fibro-vascular structures, including bones, blood-vessels, muscles and cutis. This relationship exists not only in regard to the mode of development and nutrition, but also to the pathological changes of these several systems.

Tweedy draws attention to the close relation between the development and functions of the brain and those of the optic nerve and retina ; as these last are, as we have seen, genetically direct and early outgrowths of the brain.

Again, the eye and its appendages receive their nerve supply from six of the twelve pairs of cranial nerves. Also the concurrence in organic evolution of the ocular development with the development of the powers of locomotion receives some light from pathology in the connection between locomotor ataxia and failure of vision. These all point to the intimate relationship between the eye and the rest of the body.

There is thus a histological and physiological connection and relationship between the epiblastic elements of the eye and the rest of the body, and between the mesoblastic tissues of the eye and of the rest of the body. The pathological relationship is intimate and exact.

The cutaneous eruptions of children—eczema, herpes, impetigo, etc.—are concomitants of the phlyctenulæ of the corneal epithelium. Syphilis is a disease of the mesoblastic layer, and accordingly the mesoblastic tissues of the eye are affected. The notched teeth of syphilis being due, not to faults of the epiblastic enamel, but of the mesoblastic dental papillæ.

Again, certain drugs have affinity for certain tissue elements, and this fact can be taken advantage of in prescribing.

It is well to note the frequent connection of lesions of the

posterior layer of the cornea with toxæmic states in which the serous or synovial membranes are affected.

From the foregoing short glance at the interdependence of embryologically similar tissues in morbid conditions, you can judge of the great importance of this factor in the correct appreciation, diagnosis, prognosis and treatment of the various diseases.

Epiblastic origin.	Mesoblastic origin.
	Fibro-vascular tissues.
Brain.	Muscles and cutis.
Retina and optic nerve.	Genito-urinary apparatus.
Lens.	Cornea, sclera, iris.
External integument.	Choroid, vitreous.
Epidermis.	Capsule of lens.
Corneal epithelium.	Muscles.
Cuticle.	
Organ of special sense of sight.	Supporting and nutritive system of eye.

Another general factor in connection with eye lesions, as with extraocular diseases, is this: that at certain ages the patients are more liable to certain forms of disease—*e.g.*, phlyctenulæ between the 4th and 16th years, interstitial keratitis between the 7th and 20th years, and, I believe, keratitis punctata between the 17th and 30th years. In connection with this time factor, I may mention as of importance the effect of the onset of menstruation. It is at this period that affections of the eye may declare themselves, characterised by the peculiar dyscrasia of the patient, especially syphilis and rheumatism. It happens not infrequently that the ocular lesion of hereditary syphilis may not have manifested itself before puberty, and when it now appears it is generally very disastrous and malignant.

After the preceding brief glance at some general points of relation between the eye lesions and other organic and constitutional diseases, I will now particularize. We will consider:

Firstly, *The eye symptom as a concomitant or secondary one to lesions outside of the eye.*

Secondly, *The eye symptom as primary.*

As to the first division then, it will simplify matters greatly if we further subdivide into (*a*) diseases of the eye arising from direct continuity with lesions elsewhere ; (*b*) those arising through vascular mediation ; and (*c*) those due to nervous influence.

As this portion of my subject is of such vast proportions, I will limit myself to those lesions observable by the naked eye—viz., those of the lids, conjunctiva, cornea, iris and lens.

Firstly, then, as to those originating through continuity of structure. We have, as commonest, that form of conjunctival catarrh associated with influenza, or severe acute nasal catarrh ; it is of the irritative, watery type. Pemphygus, erysipelas, leprosy and lupus have been reported ; also the spreading of tumors affecting neighboring parts, most frequently epithelioma or rodent ulcer. A marked case of this I can recollect in my first years in the Royal Infirmary in Edinburgh—that of an old Scot's Grey soldier. The growth spread across the nose into the orbit of the opposite side, destroying the nose and both eyes, finally killing the patient despite all operative procedure.

Again, I have known cases of abscess at the root of a carious tooth in the upper jaw, burrowing into the lower lid, and pointing there as an apparent abscess of the lid.

Secondly, As to those diseases arising through vascular mediation. This is by far the largest group. The first, commonest, and at the same time one of the largest members of the group is undoubtedly syphilis. We can have all of its three stages represented—from the primary hard sore, which will be referred to later on, to the most pronounced tertiary symptom.

Passing over the primary sore for the present, I will begin with the secondary symptoms. The commonest symptom is iritis, of the plastic type, which occurs anywhere between the second and eighteenth month after inoculation, but is most frequent between the third and ninth month. The iritis may be of the purely plastic type—*i.e.*, muddy, sluggish iris, with flecks of lymph on the posterior surface of the cornea, which, after floating in the aqueous humor, have been precipitated on the cornea.

Again, the iritis may be more characterised by the formation of gummata on the iris, constituting the form known as gumma-

tous iritis. These occur, as a rule, in iritis which is very late in appearing. The gummata are yellowish, vascularized nodules, which may grow slowly, with little or no pain, and have to be distinguished from tubercles of the iris, which latter are generally smaller and always paler. Of course the constitutional state also helps in diagnosis.

Two other points in diagnosis I might mention as aids to you, viz., gummata, as they grow, become a dirty brown instead of the original yellow; and, again, gummata generally grow from the edge of the iris, whereas tubercle grow from the periphery. Do not be confused by the name and consider gummatous iritis as belonging to the tertiary stage; it is a late secondary.

Syphilitic iritis generally occurs in only one eye; if due to altered blood states, why should it not occur in both? This question is unanswered yet, but Leber of Göttingen holds it may be due to entanglement in the capillary meshes of the iris, of coagula containing the specific virus. This is as yet only a theory.

The iritis of inherited syphilis occurs generally at puberty, and that in connection with interstitial keratitis some few cases are met with in infancy between the 2nd and 15th month; and I have also seen an evident case of inter-uterine iritis.

Next as to keratitis; it is of the interstitial type, and generally occurs in hereditary syphilis. The hereditary variety is commonest between the 7th and 16th years, but may occur as late as the 29th year. It has a marked tendency to relapse, and is generally associated with inflammation of the iris and ciliary body, if not the choroid. The younger the patient the better the prognosis.

In the form of keratitis occurring in acquired syphilis, the tendency is to be patchy, and it is associated with deeper changes in the iris, ciliary body, and choroid. Secondary eruptions, of course, occur on the lids.

As to tertiary symptoms, I have seen gummata of the lids and conjunctiva. In the latter position they appear as pale, gelatinous elevations.

Deep bone changes, etc., occur as elsewhere; nodes are not very common.

Of the deeper changes in the retina, choroid, optic nerve and motor nerves I will not now treat; otherwise, with what I have to say of other diseases, my lecture would be spun out far beyond the stipulated or expected time.

Passing to the next most frequent disease, I think rheumatism claims our attention. Rheumatic conjunctivitis is a well-marked variety, characterized by a pale redness, with a watery state of the eye; pain sometimes severe, and peculiar, in being worse at night just after retiring. Any marked astringent in treatment does harm; constitutional treatment has mainly to be depended on for a cure. Rheumatism also causes frequently a severely painful iritis, with a great tendency to relapse. This iritis generally occurs during the prime of life, and never, as far as I know, in an *acute* attack of rheumatism. Another frequent complication of rheumatism is scleritis, generally occurring just outside the corneal border in patches.

Again, cases of acute rheumatism of the ocular muscles have been reported, with symptoms of high temperature and pain in muscles of eye, and swelling of conjunctiva over them.

In connection with rheumatism, we may refer to gonorrhœal rheumatism, which has associated with it a, happily rare, but very severe, iritis. It generally occurs in both eyes, but not always simultaneously, and may recur with a fresh attack of gonorrhœa or of the affection of the joints. Gonorrhœal conjunctivitis is, as we all know, due to direct infection, not to any vascular mediation. Allied to this group is the gouty dyscrasia. Here we also have a form of iritis similar to the rheumatic, and some authors assert there is also a marked tendency to glaucoma.

The children of gouty parents are sometimes afflicted with a peculiar sneaking form of irido-cyclitis, there being little, if any, inflammatory phenomena, the patient merely complaining of dim vision, when on close examination we find the posterior surface of the cornea dotted over with minute precipitates of lymph which have been thrown off by the iris and ciliary processes.

The iris is sluggish and does not dilate well under atropine, showing sometimes synechia, the tension is markedly increased, but is distinguished from the increased tension of true glaucoma

by the anterior chamber being of normal or possibly increased depth.

Diphtheria, as we know, has its eye complications. Diphtheritic inflammation of the conjunctiva is in this country happily rare ; when it accompanies the throat affection, it, in the majority of cases, precedes the latter. It is exceedingly dangerous, as there is a great tendency to implication of the cornea with a corresponding loss of vision. The other diphtheritic complications are, as you know, mainly paralytic, the muscle of accommodation being frequently affected. The exact nature of this paralysis is as yet in doubt.

Tuberculosis also affects the eye. We have a form of tubercular iritis, which I mentioned to you just now in speaking of the differential diagnosis of gumma of the iris. I have also seen tuberculous ulcers of the cornea and conjunctiva. As a more distant symptom we have motor paralysis of the eye from tuberculous cerebral deposits. Tubercular affections of the choroid, retina, etc., are also found.

Typhus fever gives rise to a severe form of irido-cyclitis of a markedly purulent type.

Diabetes causes, besides deeper changes, cataract ; how, is yet uncertain. Whether from sugar in the lens, aqueous or vitreous, or from the cachexia, is unknown. Cases have been reported of clearing up of the opacity on improvement of the constitutional disease.

Besides acting through altered states of the blood, diseases of distant parts can set up eye trouble through vascular mediation by means of emboli. Ulcerative endocarditis I have seen set up a most disastrous form of iridocyclitis in a young person. In the same way, or, as Oellerts insists, by thrombosis, we have, after cerebro spinal meningitis, a purulent iridocyclitis or cellulitis of the orbit, or purulent choroiditis. Its course would be a continuation of the meningeal inflammation by means of the lymph spaces of Schwalbe—*i.e.*, the communication of the subarachnoid space with the intravaginal space of the optic nerve. Oellerts, on the other hand, says the thrombosis of the vessels by columns of white blood corpuscles and the disturbance or

even stagnation of the circulation which they occasion are sufficient to produce an acute disintegration of the red corpuscles. These disintegrating masses, like the conglomerations of white corpuscles, become thrombi and a copious diapedesis follows. The fine capillary circulation in the lids, orbit and uveal tract of the eye would favor this development. The inflammations of the choroid, iris, orbit or lid which sometimes follow parturition would, I think, be better explained by this hypothesis than that of an embolus.

I have known acute orbital cellulitis follow furuncles of the face, the road being the angular vein. Cases have been reported after tonsillitis, the course here being *viâ* the sphenopalatine vein. Suppurative phlebitis would cause it, the suppuration being set up by abscess of the face, lips, etc.

Let us now pass to the third group, those secondary eye complications arising through nervous influence. The ocular lesions in these cases may be purely reflex, or they may be of a trophic nature consequent on the depressed or irritable state of the nervous system arising from a generally impaired nutrition. Of the former or purely reflex, I have had a most marked case lately under my observation. It was a case of irritable monocular conjunctivitis which resisted all forms of treatment, and although I examined the nose at the outset, the pathological state seemed too slight to account for any such marked reflex phenomena. In the nose there existed slight hypertrophy of the superior turbinated, which pressed at one point against the septum. However, finding everything else failed, after a couple of consultations the removal of the offending hypertrophy was decided on, and after six weeks of tunnelling, etc., the recovery of the eye was complete.

Similar reflex phenomena can arise from carious teeth, for cases of strabismus, paralysis, spasm of muscles, conjunctivitis, keratitis, glaucoma, amaurosis and exophthalmos have been reported. Rumeau asserts that these may not all be purely reflex in nature, but may be due in the more superficial diseases to some obstacle to the venous circulation by compression of the ophthalmic or facial vein. Removal of the affected tooth in all the above cases effected a cure or caused great improvement.

Again, gastric disturbance, especially in children, can frequently give rise to eye symptoms, generally of a phlyctenular nature,—insufficient or improper feeding, a correction of which will have more to do with effecting a cure than local treatment.

Reflex phenomena with the sexual organs as the cause are very common, especially among females. The number of symptoms are so numerous that they would be sufficient to form the subject of a long paper. Especially do the symptoms appear at puberty and the menopause.

I have seen dysmenorrhœa set up a most persistent form of episcleritis, also phlyctenular mischief; iritis has also been reported. Amenorrhœa has been followed by ocular hemorrhages, iritis, optic neuritis, etc. Pregnancy may set up paralysis of accommodation. In fact the possible lesions are legion.

Leaving the purely reflex, we come to those symptoms due to a depressed state of the nervous trophic system. Following certain diseases and their attendant weakness, we have frequently ulcers of the cornea. When there is merely an irritable state existing, we see phlyctenulæ often develop, the irritable state of the corneal nerves causing a hyperplasia of the tissue elements, which, instead of forming healthy corneal tissue, break down. If the stage of irritability has been passed, the depression stage ensues, and we get the large necrotic ulcers of the cornea—neuroparalytic—generally of a very slight inflammatory nature, the necrosis partaking of the nature of a bedsore. These may proceed from bad to worse, or may hang fire and remain indolent, the tissue elements lacking reparative power.

The other nerve lesions setting up eye symptoms, such as encephalic tumors, are generally accompanied by changes in the nerve and retina. These I will not touch on beyond mentioning the pupillary symptoms.

So now for a few words on the semicology of the pupil. As we all know the healthy pupil reacts to light and in accommodation.

1st, When there is complete cessation of cerebral activity, the pupils are in a state of stabile mydriasis, as in the state of shock or in laceration of the brain.

2nd, If the brain functions are simply what might be called in a state of irritation, the pupils are contracted generally, firmly—as in anæmia, certain degrees of brain pressure, or early stages of cerebritis.

Any of these latter factors increased to a great degree would cause mydriasis, as one may readily see ; for example, in cases of repeated hemorrhage, which are finally pushed to syncope, or, again, in gradually increasing intracranial pressure from tumors.

The opposite to the foregoing holds for lesions of the spinal cord, for here irritation causes mydriasis, and destruction causes myosis.

If one-half of the cerebrum is affected by a cortical or superficial lesion, the pupil of the corresponding side is either dilated or contracted according as the function of the hemisphere is suspended or merely in a stage of irritation.

There are many other points I would like to touch on, but time forbids, and I must reserve a little space for the closing part of my paper.

We have, so far, considered the eye symptoms as secondary to, or concomitant with, lesions elsewhere ; let us now for a very few minutes glance at the cases in which the eye lesion is primary. These are comparatively few.

Syphilis comes first. Here we may have the initial hard chancre on the eyelid ; several cases of such have been reported, arising from a kiss, there being an open syphilitic sore on the lips of the one person and a slight crack or abrasion on the lid of the other. In Southern Russia quite a number of cases of hard chancre of the conjunctiva have occurred, originating in a peculiar way. It is there thought that passing the tongue's tip in between the eyelid and the globe is a cure for inflammations of the eye ; the rest is self-evident. A syphilitic sore on the tongue and a slight abrasion of the conjunctival epithelium did the mischief.

Quite a number of cases have now been reported where purulent ophthalmia has been followed by inflammation of the joints.

As I noted early in this paper, diphtheritic conjunctivitis may precede the throat symptoms.

Some cases have been reported where the initial lesion of tuberculosis appeared to be in the eye.

Tumors may have their primary seat in the eye, as, for instance, sarcoma, which may be pigmented or not. There is the greatest tendency to metastasis, the secondary seat being generally in the liver. Everything points to the blood as being the carrier of the infection. Another form of malignant tumor has also the eye as its primary seat—the glioma, or, rather, glio-sarcoma. It is only about half as frequent in occurrence as the true sarcoma, and generally grows in childhood. It spreads, as a rule, up the optic nerve to the brain, although cases of metastasis have been reported in the liver, kidney, ovary and lungs. Two cases came under my own observation shortly after I commenced practice.

A lady brought her child, aged 3 years, to me on account of the large size of one of the eyes. Examination revealed a glio-sarcoma; immediate extirpation was decided on as the only chance, but the growth had already infiltrated the nerve sheath far up. The child died with brain symptoms two months later after a transient improvement. A year later the unfortunate mother brought me another child, about 5 years old, with exactly the same symptoms. She was horrified when I told her my diagnosis, and refused treatment, although there was more chance of success in this case, the disease not being nearly so far advanced as in the former one. Later on this case died also with brain symptoms. These cases are rather unique on account of the rarity of the disease, the ratio being one in about twenty-five hundred.

Now, gentlemen, I am afraid I have trespassed at too great length on your time and patience. My subject has one fault—it is too vast to attempt to handle at all in one lecture. After starting to write my lecture I felt inclined to change the subject, but on second thought decided to stick to it, trusting, at any rate, that I may have shown you the importance of the subject, and that having pointed out the road, you may perchance be able to travel ahead yourselves. The connection, for instance, of eye symptoms with brain lesions in helping to localize the seat

of the lesion is daily gaining in importance. This I briefly glanced at in treating of the semicology of the pupil, but there is subject matter enough in it to form the basis of numerous lectures. The different fields of vision, the variations of color sensation, the varying diplopia arising from the paralysis of a group of nerves or a single nerve,—all these, and more, offer lots of material to delve in.

THE DIAGNOSIS AND TREATMENT OF EPILEPSY.

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(*Read before the Medico-Chirurgical Society of Montreal.*)

The diagnosis of epilepsy, as a rule, presents but little difficulty. It is, however, not unusual to meet with cases where very considerable trouble is found in concluding whether we have to do with true epilepsy or some allied affection. Hysteroid and motor disorders more frequently and closely simulate epileptic convulsions than any other affection. It is more frequent to find cases of epilepsy treated as hysteria than the converse. The following case, which presents many extremely interesting features, was diagnosed by more than one physician as hysteria.

A girl, when 12 years of age, began to complain of fits, which were variously diagnosed as epileptic and hysterical. Her father was an inebriate. Her mother and only sister suffered from neuralgia. There is a history of insanity on the mother's side. The "fits" begin nearly always with the expressions "Oh! I'm sick," or "I want my mother." "Take me home." For a period of two or three minutes she has a frightened look, but is not convulsed. She then falls into a deep sleep, lasting half an hour. She wakens up complaining of headache, and for an hour or two afterwards is, according to her mother's statement, "not quite herself." On one occasion she was requested to set the things for the tea-table, an hour after having a fit. She placed the plates on the table upside down. She generally passes urine during the fit, but has never bitten her tongue. She has no remembrance of what she says or what passes during

these "turns." On one occasion she had convulsive movements and turned over on her face. This fact itself is sufficient, I think, to establish the diagnosis that the "turns" are genuine epilepsy and not hysteria. It is certainly a matter of great importance to be able to draw a distinction between these two diseases.

The following case was also variously diagnosed as epilepsy and hysteria. A female, aged 25, with previous good health, two month after a severe mental distress, had a "fit," which she describes as a "stiffening of all her muscles." For the past year she has been troubled every two weeks with fits, which she characterizes as "severe" ones, and in addition, she has almost daily attacks of minor fits. The former are preceded by blindness and ringing in the ears, and followed by fits of "crying" and "laughing." During the attacks, which last about a minute, she is rigid. She has no remembrance of what passes during these fits. She bites her tongue and passes urine in the fit. In the slight fits she says that she has "strange feelings coming over her and then I loose consciousness, but only for a moment."

I think there can hardly be any doubt but what we have to do here with true epilepsy and not with hysteria. The hysteroid symptoms following the attacks do not exclude this. It is not uncommon to find such states in both sexes. The passing of urine and the tongue biting during the paroxysms are, however, sufficient to establish the diagnosis of epilepsy. The tonic character of the convulsions and the hysteroid state after they have passed away were, I have no doubt, the features in this case that led to the diagnosis of hysteria; and further, there was a history of those conditions which are so productive in giving rise to hysterical attacks.

It is not very rare to find genuine epileptic attacks alternating with hysterical attacks in females. Should such a patient happen to be observed only during the hysterical seizure, it is very likely that even a close observer would be misled, and would go on treating the case as one of pure hysteria.

If a patient, either male or female, bites the tongue and passes

urine involuntarily during a paroxysm, it may be set down as a certainty that we have to do with epilepsy. Patients who only have attacks of minor epilepsy followed by hysterical seizures present great difficulties for diagnosis, but nearly always, on close questioning, we are able to obtain a history of minor attacks without any post-epileptic hysterical seizures. If in the minor attack urine is passed involuntarily, the nature of the case is clear.

Unusual forms of megrim sometimes closely simulate attacks of minor epilepsy. The following case of ophthalmic migraine was mistaken by more than one observer for true epilepsy : — A married woman, aged 24, in the summer of 1888, had three attacks at intervals of a week, which began by blindness of the temporal half of each visual field. This lasted for one minute, and on one occasion the blindness extended completely over both fields. She felt a " peculiar numb sensation" spreading up the right arm ; this was followed by a painful feeling in the right eyeball, which passed away in a few minutes. Altogether these attacks lasted about ten minutes, and were on every occasion followed by a state which she describes as " being foolish and saying and doing stupid things." She would use words wrongly, a condition of sensory aphasia. After taking Indian hemp she was not troubled again until a few weeks ago. During the past four weeks she has had six in all, closely resembling those she previously had, except that in place of a pain in the eyeball she has a compressed feeling in the head. It was the latter attacks that were mistaken for epilepsy. The resemblance is, indeed, close, but from the distinct history obtained of the previous attacks, there can be no doubt, I think, but what we have to do with ophthalmic migraine.

Ordinarily the migrainous paroxysm is so prolonged, even in the ophthalmic varieties, that the diagnosis is not a matter of difficulty, but in the case related the time was comparatively short. It should be remembered that we sometimes meet with migraine and epilepsy in the same subject, paroxysms of each taking place irregularly or more rarely alternately. Cases have been recorded where migraine has ceased after the development of idiopathic

epilepsy, but to reappear after the cessation of the epileptic fits. Such combinations and relations of these two diseases is a subject of great interest.

In the diagnosis of epilepsy, it is well to remember that loss of consciousness is not an essential part of the epileptic paroxysm. It is commonly believed that loss of consciousness always attends true epilepsy. In those text-books of medicine most popular at the present time, some state that loss of consciousness is an essential part of the fit, while others hold that it is not essential. In the vast majority of all cases, and in every case of severe epilepsy, there is loss of consciousness. A recent writer contends that loss of consciousness is an essential part, and that without it we have no epilepsy. In what are called abortive attacks of epilepsy it is very frequent to find consciousness present throughout. The following case must be taken as an example of genuine epilepsy, and yet consciousness in a certain number of fits was never lost.

A man aged 22, seen in 1885, had been subject to fits for some months. They were of two different varieties. (1) In one form he would suddenly begin to rub the palms of the hands against each other ; these movements were continued for about one minute, and would cease as suddenly as they began. The patient would then proceed with the work he was engaged in, entirely unconscious of what he he had passed through. (2) In the other variety he was usually seized with flexion movements at the wrist and elbows, sometimes on the right side, sometimes on the left, and on a few occasions simultaneously in both upper extremities. During these muscular movements consciousness was maintained, never lost.

Now both of these attacks were epileptic in character. Cases illustrating this point might be easily multiplied, but that would serve no useful purpose. One undoubted case is sufficient to prove that loss of consciousness is not necessary to epilepsy. In the diagnosis, it is not enough to be satisfied with having determined that we have to do with epilepsy ; we have to go deeper and find out what is the active factor in the case in question which has brought it about. Unfortunately, in the

majority of cases our investigations in this direction are fruitless; still, cases now and then are met with where the reward more than compensates us for our time and trouble.

It will be necessary, for the sake of clearness, before considering this subject, to take a survey of the nature of epilepsy. It is necessary, for intelligent treatment, to have a working hypothesis to go on. From the earliest times the nature of epilepsy has been a subject of the greatest interest. It is unnecessary to refer here to the numerous and often crude ideas that have been advanced in the past to explain its origin. Even now, after centuries of speculation and work, we cannot say that we know anything positive as to its true nature. Through the labors of that great medical philosopher Hughlings Jackson, and also the admirable work done in this connection by Gowers, we may consider it as proved that the epileptic paroxysm is dependent upon an instability of the nerve elements in the gray matter, which has as a consequence a proneness to discharge violently. The intimate changes that bring about this instability are unknown. In many cases the influence of an indirect heredity is marked—*i.e.*, an heredity to various functional nervous affections. Such a history is obtainable in 35 per cent. of cases.* A large number of epileptics are born, then, with this instability. The above proportion seems, after considering everything, small. It is so difficult in these cases to get a full and true history that we may be safe in saying that probably in 50 per cent. of all epileptics a neurotic history is obtainable, and we must consider the fact that these histories only refer to marked disturbances. The numerous silent but potent forces ever at work in the generation of being are beyond questionings. When we consider how few people live up to a high moral or physical state, the wonder is not that there are so many, but that there are so few born with unstable ganglion cells. Many epileptics would no doubt escape if their training and habits were not vicious. A slight instability becomes, as the results of bad training, a confirmed and marked instability. Some of the causes that lead to this, in a measure, acquired instability will now be shortly considered.

* Gowers, Diseases of the Nervous System,

First, as to the influence of *traumatism* in establishing ganglionic instability. It is only within a comparatively recent period that the influence of traumatism in establishing functional neuroses has been fully recognized. Its marked effects in bringing about hysteria has been specially insisted upon by the Charcot school. The profound and chronic neuroses following railway injuries are seen and recognized everywhere. That genuine epilepsy arises from traumatism of a general nature is also an undoubted fact. I do not mean traumatic epilepsy from injury of the brain or its coverings, but an instability originating as part of the general disturbance or shock attending falls, etc. The following case I look upon as an example of genuine epilepsy originating in this way :

A woman, now aged 43 years, enjoyed good health until two years ago, when she had her first fit. The fit followed twenty-four hours after a severe fall on the ice. Her nose bled freely at the time of the accident, but otherwise there was no wound of any kind, neither was there any loss of consciousness. Her family history is good. Mother died at 62 from dropsy ; her father is 90, and in the enjoyment of good health ; four sisters and four brothers all in good health. Her first fit, as mentioned, followed closely on the fall ; the second four weeks after, and four months after the second she had seven fits within twenty-four hours, and did not recover consciousness between them—a true status epilepticus. Since then she had several fits at intervals of two and three weeks.

There can be no question that here we have a genuine epilepsy, and that it was in all probability induced by the severe commotion from which she suffered. There is not the slightest evidence of any internal injury, and there certainly is no necessity to assume any gross change to account for the epilepsy. From the literature of epilepsy it would be easy to multiply cases of this kind. Another form of traumatic epilepsy is one of very great importance. I refer to that which follows, and is due to, the cerebral concussion produced by the application of the forceps at birth. I have seen several cases where this was, in my opinion, the probable cause. A few months ago I saw a boy,

7½ years old, who had his first fit twenty-four hours after birth. He remained for three days in an epileptic state. Since that, fits have recurred at irregular intervals. He is the eldest of three children. Family history good. The delivery was accomplished with the forceps. In any one case it is difficult to prove that the concussion and compression of the brain caused by the forceps is the cause of the fits which follow, but the considerable number of cases where epilepsy has followed the application of the forceps leaves no room to doubt that it must be set down as one of the rarer exciting causes of this disease. This is a further warning to those who needlessly use these at times indispensable instruments.

I wish now to refer to a way in which cerebral instability is brought about by the poisonous action of alcohol. That alcoholism is able to bring on true epilepsy is beyond doubt. I have met with two cases of undoubted alcoholic epilepsy. In one, the patient became a confirmed drinker after his 30th year. His first epileptic fit occurred after a three days spree ; he had given up everything in order that he might drink. Now this patient at times was able to keep sober for weeks and even months, but he never had any fits except when he went to great excess, and then he almost invariably had them. Now this patient did not drink because he was an epileptic, but he became epileptic from the action of alcohol in destroying the central zone of his higher nervous mechanisms. In the other case the patient had two distinct attacks of the status epilepticus following two prolonged bouts of drinking. One occurred in 1884 and the other during the present year. In the intervals he was perfectly free. This case is a very striking example of the influence of alcohol in bringing about that instability of the cerebral gray matter which is at the bottom of epilepsy. How alcohol induces these changes is unknown. From the history of the cases reported, and from others also, it is shown that alcohol seldom induces permanent instability if the habit of drinking is given up. I do not include here that numerous class of cases where during infancy convulsions have been present, and where they have developed into confirmed epilepsy as the result of alcoholism afterwards. In

the cases reported both patients were over 30 years of age, and both had always enjoyed good health, never having had convulsions during infancy. We have to do with an acute dissolution of the centres and not with a permanent disability. No doubt if the habit of drinking is continued at short intervals for a lengthened period the centres become permanently unstable, and then we have a state not different from that we find in ordinary epileptic states.

The Treatment.

The first and most important indication to fulfill in the treatment of epilepsy is to endeavor to diminish that instability of the cerebral cells which in all confirmed cases of this disease is present to a greater or less extent. It is especially necessary that this should be before us while the disease is not as yet confirmed. By diligent attention to this indication there is no doubt that many children might be saved from becoming epileptics. In from 10 to 15 per cent. of epileptics the fits have begun in infancy, and there can be no question that careful treatment of the recurring convulsions of childhood might greatly diminish this proportion. To notice the apathy and indifference of patients as I have several times in such cases is distressing. A very great responsibility devolves on the medical attendant in these cases. The time for treatment is before the cells have acquired the vicious habit of unduly discharging. The influence of habit as related to the cells of the cerebral cortex is of paramount importance in the treatment of epilepsy. Nervous tissue, above all other tissues, is prone to easily acquire and retain organic memories. Tissues are resistive to disease in proportion to their maturity, and as the tissues of the cerebral cortex are the last of all to reach complete functional power, it follows that they are longer exposed to injurious influences. This is the reason why epilepsy may not show itself for a number of years. It is comparatively rare for epilepsy to originate after the 30th year. Fully 90 per cent. of cases begin before the 25th year. This period may be taken as about the time when the cells of the cortex have reached their maturity. The slow development of

the cerebral cortex in its functional parts at least has an important bearing on the treatment of its disordered states. Dr. Clouston says* : " The unique fact about the nerve cell is the extreme slowness with which it develops after its full bulk has been attained. In this it differs from any and every other tissue. We may say that after most of the nerve cells of the brain have attained their proper shape and full size, it takes the enormous time of 18 or 19 years to attain such functional perfection as they are to arrive at. This striking fact of such extreme slowness of development of complete function no doubt shows, as no other fact could, the complexity and importance of the functions which the brain tissue subserve. . . . . It is during this long period of gradual coming to perfection of the nerve cell that its hereditary influences for good or for evil come most into visible play. No doubt they exist before, but as yet we have no certain means of detecting them."

If we are to attack epilepsy successfully, we must go to the root of the trouble, and that is the unstable nerve cells. Really the foundation treatment of this disease is nothing more or less than an education of the cerebral cells.

Now we must for a moment consider the means through which the metabolism of these structures is carried on. The way in which they receive impressions is two-fold—(1) Through the blood, and (2) through the countless thousands upon thousands of afferent tracts which connects the cortex with the entire peripheral system. The endless changes taking place in the world about us are being constantly felt, and are ever constantly influencing for good or for evil our higher centres. There is no doubt that the functional power of the cerebral cells is more influenced by the sense impressions than it is by the chemical changes carried on through the influence of the blood. Both, of course, are necessary. Advantage should be taken of the preponderating influence of sense impressions on cerebral metabolism.

For some time I have been convinced of the importance of removing a young epileptic patient from his old surroundings.

* Morison Lectures, Edinburgh Medical Journal, January, 1891.

What can be worse for such a patient than to be brought into constant contact with those who are probably of the same nervous organization as himself? I had a case illustrating this in a very striking manner. A girl aged 12, whose mother, although healthy, was an excitable, irresolute, nervous woman, had recurring epileptic attacks for several years. Owing to an accidental circumstance the child was away from home for upwards of a year, and during the latter ten months of that period she was free from fits. On returning home they recurred with greater frequency than before. The child, of her own accord, desired to go back where she had been visiting, and with the result that she again improved. Now although this is only one case, it teaches us something useful—viz., in the treatment of these cases the environment of the patient is of great importance. It can be used as a means of educating the nerve centres. The many ways in which the environment of the patient can be influenced, and through it the metabolism of the cerebral centres, are too numerous to refer to. I will here only mention one other. It is well known that certain people have one special sense developed inordinately—developed at the expense of the other senses. In some, for instance, the hearing is acute, while the sight is dull. As frequently the converse is true. The nearer the different sense centres in the brain come to the physiological norme, the less likely are we to have unbalanced mechanism. When certain areas are inordinately acute, we have an unbalanced state; and by careful training I have no doubt much might be done in the direction of bringing about a more perfectly balanced afferent system. It is not my intention to deal to-night with the connection of ocular defects and certain ovarian and uterine operations as methods of treating epilepsy.

Ever since the treatment of epilepsy by the different bromides has become the general practice, it has become with most of us a mere matter of routine to give these drugs day after day and month after month, paying but little heed to the many other ways which, individually, are not of great moment, but when taken together are of the greatest possible importance. It will no doubt appear to many to be very heterodox to question the great

utility of the bromide treatment. That it does good in many cases, that in some cases it is indispensable I freely grant; but I as firmly believe that it does harm sometimes, and that it can be entirely dispensed with to the advantage of the patient in certain cases. I will first refer to the pharmacology of the drug. How does pot. bromide act in epilepsy? Some still maintain that it is through the blood-vessels, but there is no foundation whatever for that view. The experiments of Albertini have, I think, proved conclusively that it acts simply by depressing the motor activity of the cerebral cortex. Everything that we know of the action of the drug supports the experimental investigations referred to. Now there can be no question that an agent that depresses the reflex activity of the nerve centres cannot fulfill the first and most important indication in the treatment of epilepsy, *i.e.*, increasing the stability of the nerve centres. To neglect this indication is to neglect the first step in the proper treatment. Where the bromides are specially called for and operative are those frequently recurring attacks, say one or two weekly. Here we can with these agents break the habit—in other words, lessen the unconscious memory of the disease. The dose and mode of administration of the bromides is a matter of some importance. As to the quantity necessary, this, as is well known, varies greatly. As a rule, it is seldom advisable to order more than one drachm in the twenty-four hours; the smallest quantity sufficient to break the habit is the best. Formerly I followed the usual practice of giving the bromides after meals, but being influenced by the writings of Seguin, who strongly recommends that it be administered before meals in a weak alkaline water, I followed this practice for some time, but some recent experiences have taught me to rely on the usual method of administration after meals. The only gain in giving an agent on an empty stomach is that it enters the blood more rapidly. Now in these cases there is no necessity for this rapid absorption, and further, I feel satisfied that it is much more apt to disorder the functions of the stomach when given before meals.

Another important point is the frequency of administration. The object aimed at is to keep a sufficient quantity of the drug

in the circulation at all times to keep up the depressant action on the nerve centres. If the fits recur only during the night or morning, one dose in the twenty-four hours of ʒss or ʒi is all that is necessary. If they come at irregular intervals in the day it is well to give the bromide twice in the twenty-four hours—after the evening meal and after breakfast. As the elimination is not very rapid, being seldom complete even within twenty-four hours, we may feel assured that two doses in the twenty-four are all sufficient in any case. The elimination is, of course, more rapid during the day than during the night. It is never necessary to administer it three times in the twenty-four hours. If given too frequently we are certain soon to have bromism with its disagreeable consequences. We have a cumulative action; *i.e.*, more is taken up than can be eliminated. To prevent the disagreeable effects of a bromide on the skin, we have in arsenic a very efficient remedy.

As already mentioned, there is a class of cases of epilepsy better treated without bromides. It is that class where the fits recur at considerable intervals, say once every three or four months, or even less frequently. It has been well, and we believe truly, said by Broadbent* : "The epileptic who enjoys a certain degree of immunity from attacks in virtue of large doses of bromide is on a lower platform than one who obtains such immunity by means which raise the tone of his nervous system, and the immunity may be purchased too dearly, not to speak of the disfigurement produced by the bromide rash, or of the derangement of digestion, or of the anæmia, which are common results. I have seen patients reduced to a condition scarcely distinguishable from general paralysis by the bromides, and all minor degrees of intellectual and nervous debasement, from which condition they have been rescued by discontinuing the drug and adopting a different treatment, the fits in several instances also ceasing. The legitimate use of bromides I conceive to be for the purpose of palliation, of staving off attacks which have become too frequent, and so of gaining time for a study of the peculiarities of the case, its true causation and ultimate pathology, and for the application of remedial measures which

* The Pulse, p. 299.

shall go to the root of the disease. When the fits are separated by months, I can see nothing but harm in giving bromides regularly. If, in such a case, an exciting cause can be identified, bromides can be usefully employed to parry its influence and avert the attack; but no such identification is possible if the bromides are being taken constantly. Only by careful inquiry into the antecedent circumstances of each fit can this be done, and attention to the administration of the drug take the place of attention to other matters."

A great many other agents besides the bromides have been used with alleged success in the treatment of epilepsy. I have had very little experience with any of them. Borax in several cases failed utterly. There are good reasons for believing that a combination of a bromide with digitalis may be more effective in certain cases than when the bromide is given alone. Gowers considers that this combination is especially valuable in night epilepsies. It is altogether likely that the action of digitalis for good is effected through the circulation. It is not uncommon to find the epilepsies of adolescence to be attended with a lowered blood-pressure, and from what we know of the action of digitalis on the central and peripheral nervous system it appears very probable that its action is through the circulation and not through the nervous system. A combination of the bromides with atropine is said sometimes to succeed. On physiological grounds I should require positive proof of this statement before resorting to this treatment. Atropine has a stimulating action on the cerebral cortex in both the lower animals and man, and the combination of it with a bromide is, as far as I can see, the union of agents pharmacologically incompatible. I have had no experience of the treatment of epilepsy with nitro-glycerine or simulo.

Long ago it was the custom to recommend epileptics to abstain from nitrogenous food. A recent writer (Dr. Jno. Ferguson) has with great ingenuity insisted on the importance of attending to this. He even goes so far as to say that the treatment of epilepsy is mainly dietetic. This is, however, a very partial view of this great and deep subject. The diet should, of course, be carefully attended to, but not mainly in the direction referred

to. As a matter of fact, experience does not confirm the statement that nitrogenous food is injurious. That it may even be very necessary is more than probable in the great number of cases of essential epilepsy during adolescence, for it is here that we meet with the cases attended with low blood-pressure. For such cases a nitrogenous diet is certainly indicated on physiological grounds, and I believe experience confirms this. In cases of senile epilepsy, it is not uncommon to find high tension, and here it may be very necessary to curtail or deprive the patient altogether of nitrogenous food.

In the present paper I do not touch on the subject of epilepsies from gross cerebral changes. I have met with only one case where surgical measures were of great benefit. Two years ago Dr. Roddick operated on a case in the Montreal General Hospital with very gratifying results.

Although the treatment of epilepsy with drugs and modification of the diet in certain cases is of great importance, neither are of prime importance. The foundation treatment of epilepsy is certainly not a drug treatment, neither is it mainly a dietetic treatment. It consists essentially in the proper training of the ganglion cells—it is, in the broad sense of that term, an education of the ganglion cells and attention to all those general measures which conduce to the proper performance of function in every organ and tissue of the body.

In his description of the functions of the cerebral convolutions, Wesley Mills says*: "The quality or functional capacity of the individual elements, especially of the cortical cells, both as the result of innate, inherited powers, and as altered by education, is, of course, a matter of great importance. By education we mean all those influences that have been brought to bear npon these cells from without, of whatever kind. Apart, too, from all these considerations, it must be clear that what any set of cells can accomplish, be they brain cells or other, must depend largely upon their capacity to appropriate nourishment, which in turn will be modified by blood supply, the behaviour of excreting organs, etc. The brain and other parts are so mutu-

* Text-book of Animal Physiology.

ally dependant that they cannot be understood by any isolated consideration of the one or the other. It is not to be supposed that an individual with a poor respiratory, circulatory and digestive system, no matter what the possibilities of his cerebrum, can ever rank with an organism admirably balanced in these respects."

Those broad general principles so ably enunciated in that quotation are especially applicable to the treatment of the neuroses.

It may be considered by some present that I have wandered too far into the realms of psychology in the treatment of epilepsy, but let me remind any that may think so that our present knowledge of this disease has been mainly acquired through the studies of the cerebral functions. The education of the nervous system is a subject of the greatest importance to every practising physician, and it is only by an attentive study of each individual case in all its details by the physician that a proper system of education can be carried out. It is the physician's duty to be able to direct the particular ways in which the education of his patient should be carried on.

For every case requires its own particular training. "One of the great advances in modern education is that it recognizes that all are not cast in the same mould, and therefore cannot rationally be subjected to exactly the same kind of training; that what is suited to one is utterly unfitted to another, and that it is more than folly to submit all to one rigid, fixed mode of treatment."*

By following these lines of treatment more cases than at present will be prevented from drifting into hopeless chronicity and incurability.

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* Campbell: Flushing and Morbid Blushing, p. 217.

Retrospect Department.

QUARTERLY RETROSPECT OF MEDICINE.

By R. L. MacDonnell, M.D.,
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Appendicitis.

At a recent meeting of the Medical Society of the State of New York this important subject again came under discussion.

Dr. Herman Mynter, of Buffalo, to whom had been assigned the expounding of the gross pathology of the disease, said that he had followed in this respect the nomenclature of Professor With, of Copenhagen, who had described three forms of appendicitis: 1. *Peritonitis appendicularis adhesiva*, in which the ulceration in the appendix went so deep that the peritoneal covering was affected and adhesions were formed. 2. *Peritonitis appendicularis localis*, characterized by local peritonitis and abscess. 3. *Peritonitis appendicularis universalis*, in which there was diffuse peritonitis by perforation of the peritoneal cavity. The question as to whether abscesses which formed were intra or extraperitoneal had been debated upon. He saw no reason for any disagreement upon this point. Both the cæcum and appendix were, according to Bull and others, always completely invested by peritonæum. An abscess starting in the appendix must necessarily at the onset be intraperitoneal, limited by adhesions. If the adhesions were strong and exudations continued to be deposited so that the perforation into the abdominal cavity was prevented, the parietal peritonæum might become perforated and the pus was then in the retroperitoneal tissue—*i.e.*, in the iliac fossa—and constituted an extraperitoneal abscess, and, if not opened by an extraperitoneal incision above Poupart's ligament, might perforate elsewhere, as, for instance, into the rectum, the ischio rectal fossa, or backward.

Dr. Charles McBurney gave an elaborate review of his own practical experience in treating the disease surgically, and the deductions which he had drawn therefrom as to the indications for early laparotomy. He emphasized the fact that the earliest possible diagnosis and frequent examination of the

patient might properly be demanded of every physician and surgeon who was called to attend a case of appendicitis. Clearly defined rules, which would guide safely in all instances to a decision as to when a case of appendicitis might be safely treated conservatively, could not be laid down. A general description often, but not always, applicable was the best substitute he could offer. The diagnosis having been made in a given case, the treatment should be directed to insuring absolute rest and controlling periperistalis and retroperistalis. As a local application over the cæcum and appendix, cold was by far the best. Anodynes should not be given to the point of masking the symptoms, and were possibly better avoided altogether. If nausea disappeared within twelve hours, if at the end of the same period tenderness on pressure had not increased, if the temperature remained normal or had not risen to 100° F. in the mouth, if the pulse was not accelerated or but slightly so, and if the patent moved in bed with ease, the case was probably a mild one, destined to recovery. If at the end of twelve hours more this state of things still obtained, the chance of favorable ending was enhanced. If during the succeeding two days no tumor had formed and the symptoms had all improved, or some had improved while others had remained stationary, the case might be considered as practically safe, although complete rest should be enjoined. Again, in other cases the temperature would be higher, the pulse full, and the nausea considerable; still these symptoms might not increase in severity, and the indications for conservative treatment would be clear. In these latter cases a short interval of twelve hours or more would usually develop signs of improvement, or of the cessation of advance, or of the advance of the symptoms. If signs of improvement had appeared, medical treatment would be continued. If the symptoms had merely ceased to advance, the decision would be postponed till another visit, to be made after a short interval, the medical treatment being in the meantime continued. If the symptoms had been more marked, then the question of immediate operation arose. In all of those cases which showed well-marked signs of increasing disease, the question of an operation should be deliberately and carefully discussed, and in the opinion of the speaker, the operation should be done. It was not best to

wait for strong evidence of perforation or peritonitis. It was not satisfactory to wait till the pulse became rapid and weak and the respiration anxious. No one could name the signs of impending perforation. When spreading peritonitis was discoverable, the peritonitis has already spread. If the peritonitis had passed beyond the wall of an abscess, then the abscess had already ruptured. If marked distention of the abdomen was waited for, section might demonstrate septic paresis of the gut, a condition from which the speaker had never known a patient to recover. Such indications were conditions which it would be wiser to anticipate. It might be laid down as a rule, with few exceptions, that the indications of advancing disease could be clearly made out by the end of thirty-six hours, provided that the diagnosis had been made early and followed up by several careful examinations. Advancing disease with significant symptoms at this period offered the necessary indications for operation. The speaker then more minutely considered the various symptoms, both subtle and pronounced, which should be observed by physician and surgeon as bearing upon the important question of operative interference.

Dr. W. W. Keen, of Philadelphia, continued the discussion of the foregoing question under five heads. 1. Appendicitis of a mild form without formation of abscess and terminating in resolution. 2. Perforative appendicitis followed by general peritonitis. This class he divided into severe, early, fulminating peritonitis, and an apparently mild peritonitis suddenly bursting out into general peritonitis from perforation of the appendix or rupture of an abscess. 3. Cases of abscess formation in which evacuation of the pus was effected either by operation, external rupture, or rupture into a hollow viscus. In these cases resolution or death usually took place in from two to four weeks. 4. Abscess formation took place slowly, the chronicity continuing for weeks or months or even a year before discharge took place. 5. Cases of recurrent appendicitis. The speaker held the opinion that of the milder forms examination would demonstrate that about one-third of all adults had been affected by one or more attacks. The position taken by Dr. Keen was substantially that of the previous speaker—that conservative measures were admissible only up to a certain point, beyond which operative procedures offered

most encouraging results, the prospects diminishing in proportion to the delay.—(*N. Y. Medical Journal*, Feb. 14th, 1891.)

An Instructive Case of Appendicitis.—In discussing the advisability of an abdominal section, the question as to whether general peritonitis is present is very important. There seems to be no means of recognizing the presence of this serious complication. Within my own experience, lately, two cases have been observed where symptoms of general peritonitis were present, though in both instances the abdominal section enabled us to say it was absent. It would appear from an interesting case reported by Jastrowitz* that a case may run on to a fatal termination without there being any general peritonitis, though the symptoms of that dangerous condition may be present. The patient was a woman who, at the time when cholera was epidemic in Spain, was suddenly attacked with severe abdominal pain and all the symptoms of appendicitis. She became collapsed and cyanotic; there were severe attacks of vomiting, diarrhœa, cramps, &c. Death rapidly supervened, and at the autopsy a perforation of the vermiform appendix was found, which had been produced by a coprolith the size of a date stone. There was no generalized peritoneal lesion.

The Barking Cough of Puberty.

At a meeting of the Medical Society of London, held Dec. 15th, 1890, Sir Andrew Clark read a paper on this subject. With the aid of the head-master of Westminster, he succeeded in finding a Latin name for the affection, to wit, "Cynobex Hebetis." The paper consisted of a number of records of cases under his observatton, where incoercible convulsive cough had been present in boys or girls. The first one of his cases presented the following history: The patient was a boy of 14, who belonged to a very nervous family and was himself nervous. Whilst under examination he was odd in his movements and restless in manner. The lad was delicate, but there was no sign of any special lesion. On leaving the room the lad was startled by a sudden noise and began to cough, and had a paroxysm of coughing which lasted over a minute. The paroxysm consisted of dry, clanging, convulsive coughs, varying in intensity and duration, broken into irregular bars and

* At the meeting of the Berlin Medical Society of the 26th Jan., 1891.

phrases, and resembling at one time the barking, at another time the howling of a dog. During the continuance of the paroxysm the patient appeared to be much distressed; his face was swollen and faintly livid; the eyeballs became prominent and congested; the body bent forwards; was shaken by the violence of coughing, and the hands convulsively clutched his clothes. At the end of the paroxysm the patient appeared to be dazed and was somewhat giddy. Recovering himself in a few minutes, he passed a quantity of limpid urine, and the storm was at an end. The malady lasted thirteen months and then slowly subsided.

The other cases present a similar history. In one a cure followed a fright. An operation upon the throat was threatened and the cough ceased.

The greater number of cases occur in girls. The cough is not an ordinary nervous cough; it is not the ordinary cough of local irritation, of related pathological changes, of reflex action, of pneumogastric disturbance, or of mere hysterical disorder; but possessed of certain distinguishing characteristics, existing always in the same general environment, and occurring almost exclusively within the range of those physical and psychical changes which mark the advent of puberty, and accompany the final evolution of sex, it has a well defined individuality, and claims even as one of the habit-spasms so admirably described by Gowers, the right of separate consideration and naming. Notwithstanding the fact that the disease obtains but scanty mention in English medical literature, its existence has long been known to practised clinical observers. There are no just grounds for regarding it as a new disease. But taking all the circumstances into consideration we cannot justly doubt that this barking cough of puberty "(*cynobex hebetis pubertatis tussis canina*)" is a malady of nervous origin, character, course and issues. The prognosis is favourable. In over twenty cases of which the reader of the paper had direct knowledge the course, although usually tedious and somewhat prolonged, has ended eventually in complete recovery.

Sir Andrew Clark does not believe that he has been successful in cutting short the duration of the malady. Nevertheless he is certain that by appropriate regimen, by sedative appli-

cations to the interior of the throat, and by the administration of certain internal remedies, he has succeeded in restraining the cough within harmless limits, and in guiding the malady to a somewhat speedier issue than otherwise it would have reached. With regard to regimen all the patients had previously been overfed, and alcoholics had been too freely used. A liberal but simple dietary, abstinence from alcohol, cold or tepid sponging, warm but not too warm clothing, active exercise, early hours and general discipline.

In the discussion which followed the reading of the paper Dr. Althaus stated his opinion that a similar cough was met with in some cases of locomotor ataxy. Dr. Gowers had seen a few cases of the kind, though less severe than those described. They fell, according to him, into three classes: (1) Those in girls, associated with other nervous symptoms and classed as hysterical (in this connection it should be remembered that globus hystericus was a respiratory phenomenon of central origin, and the convulsive cough under discussion was probably a severe motor analogue of globus); (2) in boys, usually more severe—in some they appeared to be instances of local habit spasm of shifting character, and resembling true chorea; and (3) the symptom existed alone and was associated with habits of masturbation; it usually quickly recovered when that habit was abandoned. He agreed that the cough, as such, was *sui generis* and differed from the ataxic cough.

Dr. Norman Kerr referred to a case in a girl, aged fourteen, in whom cough was incessant and accompanied with giddiness, hœmoptysis, and a condition of trance. The affection disappeared in three months.

Dr. Stephen Mackenzie had found it to be more frequent before puberty; one case occurred in a boy aged eleven, and several between the ages of ten and fourteen. The condition was closely allied to hysteria or habit spasm, and the lower centres became active owing to a want of inhibitory control. The treatment, therefore, he considered should be moral rather than medical, and he adopted two plans: either to ignore the trouble or to frighten or punish the patients, as by cold shower baths and strong galvanism. The majority of cases had been in boys.

Dr. Felix Semon said that in Gottstein's work on Diseases of the Larynx, many similar cases would be found recorded.

The Relation of Syphilis to Tabes Dorsalis.

Dr. Dawson F. D. Turner records a very interesting case (*Lancet*, Nov. 1st, 1890) bearing upon this relation. A married couple, now beyond middle life, suffered some years ago severely from syphilis, and the woman had several abortions before giving birth to a living child. Both the man and the woman have developed locomotor ataxy in varying degrees. One of the children has aortic regurgitation, stammers, cannot write steadily, suffers from twitchings of the voluntary muscles and from nystagmus when asked to fix the eyes upon an object, but has no ataxia or loss of knee-jerk.

Hysteria and Organic Disease.

In a recent number of the *Charité Annalen* (quoted in *Lancet*, Feb. 7, 1891) the details of a very instructive case in this relation are recorded. The patient was a woman of 31, who, after an attack of typhus fever at the age of 21, began to suffer from a gradually increasing anæsthesia, concentric contraction of visual fields, colour blindness and disturbance of special senses. The patellar reflexes were present. The manner of the patient was marked by apathy and sleep was induced by merely closing her eyes. There was much emaciation, the apathy became still more marked, and finally before death, she was delirious with hallucinations and delusions. The case was regarded clinically as one of hysteria with subsequent mental disturbance, but at the necropsy an astonishing condition of things was found. There was tubercle in the lungs, the larynx, and the intestines, degeneration in the posterior columns of the cord, and myelitis in those columns in the cervical region. Such a condition with retained knee-jerk is certainly unusual. But there were also changes in Clarke's column, a congenital fissure in the medulla oblongata, and degeneration in the nuclei of the cranial nerves, the peripheral nerves showing no change. That so many changes in the nervous system should be present without obtruding themselves in such a way as to make possible a diagnosis other than the unsatisfactory one of hysteria is certainly strange. The case is of great importance, as affording a warning that hysteria is not to be diagnosed without the utmost care in excluding every possible form of organic disease.

The Relation of Asthma to Other Diseases.

At the Medical Society of London (Nov. 10th, 1890), Dr. Samuel West read a paper on the above subject. The word "asthma" was used in its strictest sense. It stands in no relation to affection of the lungs, other than to emphysema and chronic bronchitis, and it usually disappeared in patients who became affected with phthisis. True cardiac asthma was extremely rare, was most difficult to treat, and had no connection with angina pectoris. Referring to the connection of asthma to diseases of the stomach, he held that the cause of the asthma was not due to irritation of the gastric mucous membrane itself, but to the absorption and circulation in the blood of some product of an irritant nature. Cases of so-called "asthma verminosum" probably were similarly explicable. Dyspnœa was common in affections of the kidney, but true asthma was very rare. In uræmic conditions respiratory disturbances were common, but they more nearly resembled those seen in diabetic dyspnœa. Illustrations of the occurrence of asthma in association with gout and lead poisoning were then given. In 1872 the connexion of asthma with certain affections of the nose was first established, and it seemed to be proved that reflex neuroses sometimes arose in connexion with such lesions as polypus, chronic rhinitis, paroxysmal sneezing, etc. The subject has been approached in two ways: a series of cases of asthma having been taken, and the occurrence of nasal affection noted, and then a series of nasal affections in which asthma had been present. There was some slight connexion between the two, but it was by no means constant. In some cases, however, the connexion seemed exceptionally strong, instances being quoted where the growth of nasal polypi was associated with the onset of asthma, which latter disappeared upon the removal of the growths. He regarded hay asthma as a variety of the true affection, and he pointed out that the association of asthma with pharyngeal disease was very rare. Many affections of the neck and mediastinum were met with in which asthma occurred, but it was impossible here to dissociate the effects of pressure. The association of asthma with disease of the skin appears to be only accidental, or perhaps both were the joint effects of a common cause. A sufficient number of cases of asthma in asso-

ciation with cerebral affections had been recorded to make it more than a coincidence. It has been observed, though rarely to alternate with insanity and with hysteria. Like epilepsy it appeared to depend on an unstable condition of the nervous centres, and explosion could therefore be excited reflexly by a number of causes. He adopted the hypothesis that there was an asthma centre in the medulla, which could be acted on from above by emotion, various psychoses, epilepsy and some cerebral lesions; in the centre itself by uræmia and dyspepsia; from below by disturbance of the special senses, such as of the olfactory and optic nerves, by stimulation of the nerves of common sensation, as of the fifth in the face, and by cutaneous irritant rashes. It could be acted on also by the branches of the pneumogastric distributed to the neck, thorax heart, lungs and stomach, and by the sympathetic through its branches from the intestines, kidney and uterus. It affected many sets of muscles other than those proper to the bronchi, and therefore could only be of central origin. In conclusion he regarded asthma as a reflex neurosis, producing spasm of the bronchi and of the diaphragm, associated with bronchial vaso-motor disturbance, and an unstable condition of the respiratory centre. It so closely resembled epilepsy that Hughlings Jackson had defined it as a "respiratory convulsion."

In the ensuing discussion Dr. Sémon said that the more he studied the relation of nasal affections to asthma the more obscure it appeared to him. If an asthmatic patient presented himself who had nasal trouble but no other discoverable local lesion it was impossible to assure him that the curing of the nasal disease would relieve the asthma, or still more cause it to disappear. He advised patients, as a rule, to leave the nose alone, because in the majority of instances treatment would not be successful, but as some cases were relieved by treatment, it was legitimate to try it as an experiment.

QUARTERLY RETROSPECT OF SURGERY.

By Francis J. Shepherd, M.D., C.M., M.R.C.S., Eng.
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Aneurysm: its Cure by inducing the formation of White Thrombi within the Sac.—In an address delivered before the Midland Medical Society, Dr. W. Macewen (*Lancet*, Nov. 22nd, 1890) says the attempts to produce coagulation in aneurysmal sacs by the introduction of foreign bodies into their interior have, as a rule, failed. For the formation of red thrombi the blood must be at rest, and this is an impossibility in an aneurysm at the root of the neck unless the sac be occluded, and Dr. Macewen believes that in these cases where success has attended the efforts of the surgeon in endeavoring to promote the formation of a thrombus, that it is the white thrombus that has formed from the first. The red easily breaks down, whilst the white is prone to undergo replacement by vascularised fibrous tissue, and is seldom subject to the various forms of softening which affect red thrombi. White thrombi form in the interior of the vessel at a spot where irritation has been induced, and from which the endothelium has been removed, there the leucocytes become firmly adherent to the vessel, and tend to grow by superimposed accretions, so that a partial thrombus forms and may proceed to complete occlusion. The method of producing white thrombi recommended by Dr. Macewen is as follows: The wall of the aneurysm should be irritated in such a way as to induce infiltration of the parietes with leucocytes and a segregation of these from the blood stream at the point of irritation. The irritation should be just sufficient to set up reparative exudation. To promote rapid formation of white thrombus, it is better to act on the wall of the aneurysm so as to produce uniform irritation over its whole surface or to stimulate as many points in its interior as possible, and in this way many foci will throw out white thrombi, and at each such place the vessel is being strengthened and prevented from further dilation. The instrument employed is a pin long enough to transfix the aneurysm and permit of manipulation within it. It should be very fine and taper to the end like a sewing needle, and have

a round head. The calibre of the pins should be of various sizes for the different aneurysms, as some have tougher and thicker coats than others and require a stronger pin. The pin should be finely polished so as to the more easily render it aseptic. Before operating, the skin over the aneurysm should be carefully cleansed and rendered aseptic. The aseptic pin should then penetrate the sac and pass through its cavity until it comes in contact with the opposite side; it ought to touch it and no more. Then the pin should be either moved over the surface of the inner wall so as to irritate its surface, or the same object may be effected by allowing the impulse of the blood current to play on the very thin pin. After acting for ten minutes in one part, then, without removing the pin, its point should be shifted to another until the greater part of the internal surface has been touched. In some cases it may be necessary to puncture more than one place. While in the aneurysm the pin should be surrounded by aseptic gauze or moistened with an antiseptic solution, and when it is withdrawn the part should be dressed with a moist antiseptic dressing. It should not be left in more than 48 hours, and in some cases more effect is produced in 24–36 hours. In very large aneurysms several pins may be introduced. Dr. Macewen reports four cases treated in this way. In two there was absolute consolidation and hence cure, one being femoral, the patient dying of carcinoma of the tongue thirteen months after the sac was examined; the second case was one of intrathoracic aneurysm in a woman aged 47. The function of arm was restored and complete consolidation took place. In a third case of aneurysm of the abdominal aorta, the treatment was interrupted before complete consolidation took place, the man returning to his work; he was alive $2\frac{1}{2}$ years after.

This method of treatment is a simple one, but only suitable for uncomplicated cases. It is a distinct advance in the treatment of cases which are often apparently hopeless. The greatest care should be taken to have all the parts aseptic, as if septic matter be introduced, disastrous results would be very apt to follow. The result of this treatment in the hands of other surgeons will be anxiously looked for.

Another New Method for the Relief of Hernia.—Dr. E. Kassini of Padua has devised a new operation for the radical cure of hernia. (*N. Y. Medical Record*, Jan. 17th, 1891.) He endeavors to restore the inguinal canal to its normal shape, making it run as in health—obliquely. The aponeurosis of the external oblique overlying the inguinal canal and the pillars of the external ring are first exposed, and after all bleeding has been arrested, the aponeurosis is incised over the whole course of the canal, and is dissected out from the contiguous structures so as to form two flaps, which are folded back to expose the underlying tissues. The spermatic cord is now drawn out and separated from the neck of the sac as far back as may be; then the sac is opened, adhesions broken up, and omentum, if any excised. The hernia being reduced, the neck of the sac is twisted and ligated, and the portion below the ligature cut off. Next, the triple layer formed by the internal oblique and transversalis and Scarpa's fascia (conjoined tendon ?) is dissected away from the aponeurosis, and adipose layer above and below the outer margin of the rectus muscle brought down and attached by interrupted silk sutures to the posterior part of Poupart's ligament, forming thus the posterior wall of the spermatic canal. The divided portions of the external oblique aponeurosis are brought together by sutures and the wound dressed antiseptically. A new canal is formed from the spermatic cord by this operation. Dr. Bassini publishes 251 cases he has treated in this way, and 108 remained cured from 1–4½ years; 131 cases treated from a month to a year before the tables were compiled remained well; 4 cases had been lost sight of, and in only 7 was there any appearance of a return of the hernia. Such results as reported by Professor Bassini have, as yet, been attained by no other surgeon but Macewen of Glasgow. As a rule, these operations for the radical cure of hernia are more successful in the hands of the originators than of those others who follow them; remarkably skillful surgeons have not had such success with Macewen's operations as he has had himself. Why, it is difficult to say.

The Treatment of Gangrenous Hernia.—There is still much

diversity of opinion as to the proper treatment of gangrenous bowel, or bowel suspected to be gangrenous, when found in a case of strangulated hernia. Should the intestine be resected, or should the bowel be anchored near the wound or should it be left outside the abdomen? The latter method is adopted by many, but it has its disadvantages, such as the occurrence of artificial anus, the subsequent appearance of a large hernia owing to the very free incision it was necessary to make to enable peristalsis to go on undisturbed. Dr. Poulsen of Copenhagen (*Hospitals Tidend.*, R. 3, Bd. 7) has collected 23 cases of primary resection with 5 deaths; but this does not give the correct mortality, as many unsuccessful cases of resection of the bowel are unpublished, and he is of opinion that the mortality is much greater. He proposes drawing out the gangrenous intestine after dividing the sac up to the internal ring, and dividing the abdominal wall some two or three centimetres; healthy gut to the amount of several centimetres is also drawn out; the peritoneum is stitched to the skin and the gut fixed by silk sutures, so that the two tubes are close together. The gangrenous sac is removed, but not the gut; the cavity is then packed with iodoform gauze, which is also pushed into the mouth of the hernial sac. Two days later the extracted coil of intestine is removed by Paquelin's cautery, and later enterotomy, followed by enteroplasty, is performed.

Dr. Helperich of Greifswald (*Beilage zum Centralblatt f. Chirurgie*, No. 25, 1890) proposes to establish intestinal anastomosis between that part of intestine above the gangrenous gut and the part below it. When anastomosis is completed, the intestine which has been drawn outside the ring for operation is replaced, but the part threatened with gangrene is allowed to remain outside the hernial opening. If gangrene occurs, it does not matter, as peristalsis is obtained from the first by means of the anastomosis. The author says the operation is easy, and should be performed with sutures, opposite the attachment of the mesentery, to the extent of about 4 cm. The operation is exactly like gastro-enterostomy; he prefers this method to Senn's plates, as he fears that the bowel, in consequence of the reduced con-

dition, might be further endangered by the pressure of the rings. Should the gut become gangrenous, it can easily be resected without danger, and because of the anastomosis the abdominal wound readily closes. Should the intestine retain its vitality, then no harm is done, as the bowel can easily be separated from its recent adhesions and returned into the abdominal cavity. Dr. Helperich has performed this operation in two cases of threatened gangrene; one recovered, the other died of collapse. It is questionable whether this operation would be of use in actual gangrene of the gut.—(Quoted in *Annals of Surgery*, Feb. '91.)

At a meeting of the London Medical Society, held Feb. 16th, 1891, Mr. Stephen Paget exhibited a man, aged 24, on whom he had operated for strangulated hernia. Finding the gut gangrenous, he fastened it outside the abdomen and opened it at once. The man did well, the bowel skinning over and receding until only a minute fistulous opening was left. Mr. Paget said it was not justifiable to resect the bowel at once, or to make an anastomosis as suggested by Helperich. Mr. Allingham related a case where he had treated the gangrenous bowel in a like manner, with the result that when the sloughs came away the wound healed, leaving a fistulous opening which had since completely closed. Mr. Ballance also advocated this method of treatment.

This method is one that every practitioner can adopt without causing any more risk to the patient. It is not every practitioner who is able at a moment's notice to resect a bowel or perform anastomosis. It is all very well for hospital surgeons who have all the necessary appliances and assistance at hand to recommend resection, but the country doctor who is more likely to see these cases had much better treat the gangrenous gut by opening and leaving it outside; he will give his patient a much better chance by this simple procedure than by attempting complicated and difficult intestinal operations, which even in the most skilled hands are often unsuccessful.

W. H. Bennet (*Lancet*, Oct. 18th, 1890), in a clinical lecture *On the Management of Damaged Bowel in Strangulated Hernia*, delivered at St. George's Hospital, reports three cases

in which there was damaged bowel, and advises the following treatment: free division of the stricture, the return of the intestine just inside the abdomen with as little pressure as possible after thorough antiseptic cleansing; the careful adjustment of a drainage-tube, having a diameter of not less than half an inch, in such a way that its inner extremity may be almost in contact with the damaged bowel. He considers resection very rarely necessary, and a fæcal fistula very much to be preferred to an artificial anus.

Treatment of Recent Cases of Strangulated Hernia by Aspiration.—Dr. Hern (*Brit. Med. Jour.*, Feb. 7th, 1891) says that when he fails to reduce a strangulated hernia under chloroform by taxis, and there is great tension in the tumor, he reduces the tension by the use of a hypodermic syringe. He has done this on 32 occasions, and in 28 reduction was easily accomplished. Of the remaining four, three were subsequently operated on with one death, and the fourth refused further operation. He considers that the class of cases suitable for this procedure are recent cases (36–48 hours), and where friends refuse to submit to herniotomy.

Radical Cure of Hernia in Children.—Mr. R. W. Parker (*Brit. Med. Jour.*, Feb. 7th, 1891) describes the following operation which he has practised with success for years in hernia of children. "An incision about two inches long is made, the upper portion of which corresponds with the position of the external ring; the sac is thus exposed and is cleared of its looser and more external layers, then, after getting the spermatic cord well out of the way, the sac is pulled down as far as possible, and three or four stitches are put in, drawing the neck of the sac tightly together, but not strangulating it. The silk sutures are retained permanently *in situ* as long as possible. The neck of the sac is now allowed to retract beyond the pillars of the external ring, after which the pillars of the latter are sewn together and the wound closed. He prefers silk to any other suture, and boils it in a carbolic solution of 1–20.

Operations by Prof. Billroth for Radical Cure of Hernia.—These comprise (*Archiv f. Klin. Chirurgie*, Bd. xl., p. 491-555)

136 cases of inguinal, femoral and umbilical rupture in both sexes reported by Haidenthaller; 93 operations were performed on 89 persons, whilst in five instances alcohol was injected into the sac. The operation employed (Czerny's) consisted in ligaturing and removing the neck of the sac and uniting the deep and superficial parts of the wound by silk sutures. The mortality in 51 non-strangulated cases in 48 patients was 6.25 per cent., and the causes of death were entirely of septic origin. The result in most cases was a true radical cure, though occasionally the herniæ returned, in one case six years after the operation and in three cases after a lapse of five years. The cases in which alcohol was injected into the sac, though at first apparently cured, afterwards relapsed. Macewen's operation, which was employed in some cases, was not thought favorably of; the author considered it clumsy, complicated, and the free separation of the sac often led to its sloughing. He considered that the success of the operation depended on the stoutness of the silk employed and the length of time the edges of the wound could be held together.

Surgical Tuberculosis Treated by Koch's Lymph.—The hopes as to the efficiency of the injection of Koch's lymph in surgical tuberculosis have been rudely shattered by recent reports of cases from abroad and experience at home. Very few cases, so far, have been benefited, fewer, still, have been cured, whilst not a few have been distinctly injured by the treatment. In some, disease has been conveyed to distant parts, and in others the local disease has been aggravated rather than improved. Deaths have also occurred from its use, and most surgeons who have had much experience with it have come to the conclusion that the remedy is often a dangerous one, and must be used most cautiously and in selected cases. Perhaps recently the reaction from high hopes at first entertained has made the pendulum swing too much in the other direction, and before pronouncing upon its usefulness or uselessness time should be given to get the final results of the carefully conducted experiments with the lymph now going on in the various hospitals at home and abroad; still the fact remains that many able and thoughtful men have discontinued its use,

and others have, though still continuing to use it, nearly lost faith in it. Dr. Jas. Israel, at a meeting of the Berlin Medical Society, held on Jan. 21st, 1891, stated that he had had 24 cases of surgical tuberculosis under treatment by the lymph during 30–60 days. One case of hydrops articuli he pronounced cured; two cases ended fatally; five cases (one of lupus) remained absolutely uninfluenced by treatment, although there was general reaction there was not the slightest local change; six cases showed decided improvement; five showed none, two relapsed, and three became decidedly worse. He draws the following conclusions:—

(1) The remedy does not in all cases, even if we exclude caseous foci, exert an influence on tuberculous tissue.

(2) The remedy does not always produce necrosis, but sometimes inflammatory phenomenon also.

(3) The intensity of the local reaction bears no proportion to the intensity of the general reaction.

(4) The intensity of the local reaction is no criterion of the therapeutic effect. Good effect may be produced where the local reaction is feeble, and intense local reaction may be unaccompanied by any favorable therapeutic effect.

Jonathan Hutchinson, in a lecture delivered on *Lupus* on Jan. 27th, 1891, says that nothing that can be called a cure of lupus had yet been obtained in London, so that it seems unnecessary to ask the question if the cures are lasting. He also said that it had come to his knowledge that relapses occur very quickly. The patient taken to Berlin by Mr. Malcolm Morris and Dr. Pringle was for a time supposed to be almost cured; now his condition was almost as bad as before the operation. He says no doubt in many cases the fluid has done very great good, and no one can doubt that it possesses very great powers.

Dr. Thibierge (*Annales de Derm. et de Syph.*, Dec., 1890), after passing some time in Berlin, gives the results of his observations. He says at first it was an accepted fact that lupus cases were promptly cured, and cases were discharged, but after a time relapses were found to occur. The dose for lupus is relatively large, Koch advising 1 centigramme as an initial dose, and he had seen 40 milligrammes injected without apparent

harm. Intense local reaction usually follows often after 1 milligramme, when the crusts fall off, leaving a smooth, rose-red surface, but after all reaction has ceased. The gross appearances indicate lupus nodules still present; not a single case was seen cured even in appearance.

At the meeting of the Berlin Medical Society, Jan. 12th, '91, Köhler reported that since October 11th, 1890, 59 cases had been treated at the Bardeleben klinic. Three had been discharged as cured, and one as improved. The cases of cure were inflammation of the elbow and fistula of the wrist joint, and one of acute coxitis in a girl aged 23. One case of hip-joint disease died after seven injections, and solitary tubercles were found in her brain.

Baum (*Deutsch. Med. Zeit.*, No. 103, 1890) reports two cases of cure after injection—one of lupus of right hand and fingers, and another case of ulceration of right cheek and eyelid.

Bulikonski (*Przeglad lekars*, 50, 1890) comes to the following conclusions regarding cases treated in Kaposi's klinic in Vienna:—(1) The injection of Koch's lymph excites in lupus areas an inflammation accompanied by well known general symptoms of reaction. (2) Reaction follows not only in pure tuberculous diseases, but also in others, as in leprosy, sarcoma, etc. (3) It cannot yet be positively stated that the injection of the lymph is always followed by reaction, even though the disease is staictly tuberculous in nature.

Czerny says (*Deutsch. Med. Woch.*, 51, 1890) that in the initial forms of tuberculosis and in lupus the Koch material is so satisfactory in its results that it may be fairly considered the most brilliant discovery in therapeutics.

In a letter from Berlin (*Univ. Med. Maga.*, March, 1891), Dr. Guiteras says that many hopes awakened by this discovery have not been verified. The building up on this basis a system of treatment is the weakest part of the structure. The curative operation of the agent is limited to a small number of cases, and these cases we can perhaps conceive curable by other means. He further states that if we take away from this discovery all possibility of success as a therapeutic agent, yet Dr. Robt. Koch

has given us the first clear insight into the functional pathology of the approaching epoch.

The discussion at the Berlin Medical Society on tuberculosis and its treatment by tuberculin came to an end on Feb. 25th. Frænkel, in his reply, says: "I am of opinion that tuberculin exercises a direct influence on those parts of the body where tubercle bacilli exist and where they have caused changes to take place, and that this influence consists in a corrosive action with supervening necrosis. Thus I uphold my opinion that tuberculin is a specific for tuberculosis."

The cases of surgical tuberculosis treated in the Montreal General Hospital have not shown much improvement; on the contrary, many seem to be much worse than before the treatment by injection of lymph was commenced. The cases injected comprised tuberculosis of testicles, bladder, glands of neck, knee joint, lupus, tuberculosis of the skin, etc. The cases of lupus showed no local reaction until some time after the injections were discontinued, though the general reaction was most marked. The result was that the patients were rather worse than before the commencement of the treatment. The same may be said of the joint cases and the testicle cases. A case of enlarged glands of the neck after injection with the lymph, showed signs of consolidation of the apex of one lung, though apparently the lungs were quite normal before. On the whole, our experience has not been favorable in the surgical wards. It is well to keep in mind that fresh and unsuspected foci of tuberculous disease may be lighted up by this treatment, and Dr. Liebmann of Trieste (*Berlin Klin. Woch.*, No. 4, 1891) states that tubercle bacilli are found in the blood of people under treatment with tuberculosis owing to the liberation of bacilli from a localized focus. Dr. L. says he never found bacilli in the blood of persons not treated with the lymph. Dr. L.'s statements, however, require confirmation.

Craniotomy for Microcephalus.—A somewhat similar operation was performed in Montreal by Dr. W. Fuller as far back as 1878, and the case was reported at the time (*Canada Medical Record*, vol. vi), but it attracted no attention. Dr. W. W. Keen (*Med. News*, Nov. 29, 1890) reports a case which he believes to be

the first operated on in this country, and quotes two cases of this operation done by Lanne-longue of Paris and published in 1890 (*L'Union Médicale*, July 8, 1890.) Dr. Keen's case was that of a girl aged 4½ years, with a small, prognathic head. She never could walk, was constantly moving, wringing her hands, and slavering. Six inches and a half of the cranial vault, one-quarter inch wide, were removed from a little to the right of the sagittal suture; recovery from the operation was complete in five days, and the further result regarding the intelligence of the child, etc., was promised in a future report. A somewhat similar operation, though much more extensive, was performed by Prof. J. A. Wyeth of New York (*N. Y. Med. Record*, Feb. 21, '91) on a child 11 month old, with very encouraging results.

Successful Resection of the Liver.—Dr. G. Fogliani (*Gazetta degli Ospitali*, Jan. 21, 1891) reports a successful case from the practice of Prof. Tansini of Modena. Patient, a woman aged 25, admitted Nov. 26, 1890, suffering from a tumor of the epigastric region as large as a fœtal head, with shooting pains in the abdomen and occasional vomiting, first noticed swelling three years before. Laparotomy was performed on Dec. 8th. The tumor was firmly adherent to the omentum, and in separating it many ligatures had to be used. In drawing out the tumor it was seen to be a hydatid cyst, imbedded in the left lobe of the liver. Prof. Tansini dissected it out, and finally, by sacrificing some of the liver substance, got it out whole. The hemorrhage, which was considerable, was checked by ligatures and temporary plugging. The wound in the liver was then closed by two series of sutures. The patient got rapidly well without rise of temperature, and was discharged cured in seventeen days.

Surgical Treatment of Cancer of Pyloric End of Stomach.—Dr. W. T. Bull (*N. Y. Med. Record*, Jan. 10, '91) reports three cases of pylorectomy with gastro-enterostomy for carcinoma. The first case, alluded to in a previous *Retrospect*, was that of a woman aged 27, operated on April 10th, 1890. She was alive and in good health at the time Dr. Bull's paper was read. The greater part of the stomach was excised and the cut duodenum and stomach closed completely, then a fresh open-

ing was made in the anterior wall of the stomach near the great curvature, and another in a loop of jejunum near its commencement. Abbe's catgut rings were introduced and then secured in the usual way. The operation occupied three hours. The patient was fed by the rectum for two days, fluids by mouth on third day, and solid food on the tenth day. She left hospital well at the end of seven weeks. The second case was also one of carcinoma in a man aged 63, but he died from faulty suture of the duodenum at the end of fifteen hours. The operation took two hours. The third case was a woman aged 63, and was also unsuccessful owing to the accident of leaving a sponge in the stomach, which led to rupture of the line of union and peritonitis. In preparing his patients for this operation Dr. Bull uses a stomach pump while the patient is under ether. He performs the median incision and prefers it to any other. He uses no clamp for the stomach or duodenum, but prefers the fingers of an assistant. A plug of iodoform gauze stops the duodenum and flat sponges keep the stomach dry. The cut end of stomach and duodenum are closed by a continuous suture of the mucous membrane, reinforced by interrupted Lembert's sutures. In using the catgut rings he always, in addition to the silk ligatures, makes use of a continuous silk suture.

One-half the cases of pyloric cancer are favorable to operation according to Gussenbauer, the neighboring glands not being involved.

Dr. Robert Weir, on Dec. 8th, 1890, read a paper before the Surgical Section of the New York Academy of Medicine on *Gastro-enterostomy rather than Resection for Cancer of the Pylorus.* He says that in the 96 cases of gastro-enterostomy that he had collected there were only 39 deaths (40 per cent.), and all these were done by the old method of operation. In 24 cases where the approximation plates or rings were used there were only 3 deaths (12 per cent.). In Billroth's 41 cases of pylorectomy for fibrous stenosis there were 22 deaths, 16 of these from stitches giving way at the duodenal end.

Experimental Studies in Intestinal Surgery.—In the *Medical News* of Feb. 28th, 1891, Drs. Ashton and Baldy of Phila-

delphia have a paper on the above subject. It describes the technique and methods of the work they have done on the lower animals. Amongst the improvements introduced to increase the rapidity and safety of operations is a new approximation ring made of segments (usually two) of solid rubber cord one-eighth inch thick, united by catgut ligatures. Only four approximation ligatures are used, and are tied to the catgut uniting the segments together. The advantages of this ring are that it has a large opening, and the approximation surface is small and does not take up much space. It is solid, immovable, firm, and easily manipulated. It is quickly made and costs little. For implantation of the ileum into the colon by end to end invagination a different ring is used, made of the larger sized rubber bands found in stationers' shops, half an inch broad and one-sixteenth of an inch thick. They can be cut the required length and stitched with catgut. After the approximation sutures are tied, the operation is completed by a continuous gut suture round the parts and through its serous membrane only. In end-to-end invagination, first a resection is made, a rubber ring of the proper size is introduced into the proximal end of the gut, then with a continuous catgut suture the cut edge of the bowel is stitched to the lower edge of the rubber ring. A strong catgut suture with needle at each end is now introduced. Each needle is carried in turn into the lumen of the gut until it reaches the upper edge of the ring; it then perforates the rubber, passing directly through it and the intestinal wall, bringing both ends outside the gut. Several sutures are thus passed, and they are afterwards introduced into the distal end of the gut, half an inch from the cut edge, like a Lembert suture, but including muscular as well as serous tissue. The portion of the gut with the rubber ring in it is then invaginated into the distal end and all the sutures being pulled tight, care being taken to turn in the portion of bowel beyond the point where the sutures are introduced. To complete the operation, a supplementary continnous silk suture is placed around the whole circumference of the invagination. The authors say this method is rapid, and there is very little danger of leakage. The

description, which is complicated, is difficult to understand without the aid of illustrations with which the original article is supplied. A somewhat similar method is described for the purpose of bringing the ileum and colon together by invagination.

Constriction of the Ileo-Cæcal Valve.—Pean (*Medical News*, Feb. 28th, 1891) describes an operation for the relief of the above-mentioned condition by incising the colon, cutting away from the valve all abnormal tissue, and then suturing again the cut bowel by catgut.

Nephrectomy for Hæmophilia Renalis.—Professor Senator (*Berlin Klin. Woch.*, Jan. 1, 1891) reports a case of hæmaphilia renalis in a girl aged 19. A hereditary tendency existed in the family of her father. The seat of the bleeding was located in the right kidney with the endoscope by Dr. Nitze. Medicinal measures proving of no avail, and the patient threatening to die of anæmia, nephrectomy was performed, the patient making a rapid recovery. The excised kidney was perfectly normal. In his paper Senator mentions two other cases of nephrectomy for obstinate hæmaturia.—(Quoted in *Medical News*, Feb. 7, '91.)

Removal of the Gasserian Ganglion for Severe Neuralgia.—In the last *Retrospect* was noticed the bold operation performed by Mr. Rose of King's College Hospital, London, of removal of the Gasserian ganglion for severe neuralgia. Mr. Rose a second time performed this operation (*Lancet*, Feb. 7th, 1891) on Thursday, Jan. 29th. The patient was a female, aged 60, under Dr. Ferrier's care, who had suffered for many years from severe neuralgia, chiefly affecting the right superior maxillary nerve. After being put under chloroform the eyelids were stitched together on the right side, a flap of skin was dissected forward, the zygoma was exposed, and after holes had been drilled by an electromoter, it was divided and drawn down with the masseter muscle. The coronoid process of the lower jaw was also drilled and divided in this same manner, and turned up with the temporal muscle attached; the external pterygoid muscle was then cut through and the foramen ovale reached, into which the pin of a half-inch trephine was inserted and a disc of bone removed. The bleeding was troublesome, and persisted for some time. The ganglion was seized

by some specially constructed hooks, one of which had a cutting edge on a concave surface. Its attachments were thus loosed and divided. The wound was washed with bichloride solution. The bones which had been sawn through were replaced and secured in position by nine sutures, a drainage-tube inserted, and the wound dressed with cyanide gauze. The operation took one hour and a half. The patient, when the report was written, was doing well. The first patient operated on by Mr. Rose in April 1890, by a different operation, still continues free from pain and is in good health.

Repeated Operations on the same Nerve for Chronic Facial Neuralgia.—Dr. Edmund Andrews (*Medical News*, Feb. 14, '91) says that repeated operations on the same nerve will give after each operation a prolonged period of relief to patients suffering from facial neuralgia, and relates cases to prove this. He says that in chronic cases the Gasserian ganglion is always inflamed and extirpation would effect a permanent cure. He suggests the following operation, but evidently had not heard of Mr. Rose's description of his first operation in the *Lancet* of Nov. 1st, 1890. *Operation*—First raise the tissues from the outer surface of the ramus of the jaw and divide the ramus below its middle, then forcibly turn the ramus out so as to expose the parts within. Identify the nerve and follow it up and in to its exit from the foramen ovale; enlarge the foramen to admit of the entrance of a very small curette, and thus break down and remove the ganglion. After the operation the ramus could be replaced and wired.

Fibromata of the Naso-Pharyngeal Space: their Treatment by New Methods.—Removal of these growths by ordinary surgical methods has not proved very satisfactory, the severe hemorrhage which accompanies operations being the chief impediment to success. Dr. Thudichum (*Lancet*, Jan. 31st, 1891) advocates the use of the electro-cautery in these cases; by this means he dissects out, divides and destroys the tumor. Bleeding is either prevented or arrested by the injection into the bleeding adhesions of a concentrated solution of ferric chloride. He employs the electro-cautery in two forms—one, the fork-burner, which cuts into the parts like the sharpest chisel; the other, the electro cautery loop, used while hot as an écraseur. The styptic is injected with a small syringe

armed with a long platinum needle. No general anæsthetic is used, only a local one, as cocaine. Almost the entire operation is performed through the nose, and the risks of the operation are absolutely *nil*. In some cases the tumor has to be cut to pieces in the pharyngeal space, through the nose, by a cutting instrument like a lithotrite, and removed in pieces with a wire loop. The operations are tedious, but safe. A number of cases are cited.

Volkmann's Treatment of Inveterate Club-foot.—Von Büngner of Halle, in a paper on the Volkmann treatment of club-foot (*Centralblatt f. Chirurgie*, Jan. 1891), says that however advanced the age of the patient, and complete the ossification of the bones, there exists still almost unimpaired a "transformative power" or a power of moulding the opposed surfaces of bones by the ordinary processes of absorption under pressure and of nutrition generally to the conditions under which they may be placed naturally or by artificial means. The worst cases of club-feet have been successfully treated without operation in adults from the age of 20 to 30. In one case of extreme talipes varus in a young man aged 24, the procedure was as follows. The patient being placed under chloroform, the foot was forcibly flexed to the utmost degree possible and fixed in the new position by a bandage of water-glass, which is much harder and more durable than plaster. Thus partially relieved the patient was allowed to walk as well as he could, thereby continuing the pressure in the desired direction and developing the muscles of the leg and foot. After some weeks the procedure was repeated, more complete rectification being obtained until a cure was effected. The cure was complete at the end of fourteen months. He could then wear ordinary boots, could walk for an hour without fatigue, and when the feet were covered with socks, showed no deformity.

Treatment of Acute Effusion in the Knee-joint by Tapping.—Mr. Edmund Owen (*Practitioner*, Feb. 1891) recommends that in cases of traumatic effusion of the knee-joint good results follow tapping with trocar or evacuating the fluid by means of an aspirator. He prefers the trocar and cannula, and makes the puncture on one side of the patella; when the cannula is withdrawn, the opening should be closed with collodion and the limb fixed in lateral splints of house-flannel and plaster-of-Paris. Great relief is at once given to the patient.

I have myself followed this practice for some years, both in ordinary synovial effusion following injury and in fractures of the patella. In my cases I have always used the aspirator, and have immediately afterwards put the limb up in plaster-of-Paris. This is the quickest way of treating such cases, and one which gives almost immediate relief to the patient.

Lithotrity by a Series of Sittings.—Prof. Guyon (*Annales des Malad. des Organes Genito-Urinaires*, Dec. 1890) describes a class of cases in which he has found it advisable to empty the bladder in a series of sittings, although he has adopted *in toto* Bigelow's views for all ordinary cases. The cases needing a series of sittings are those in which the calculus is phosphatic. In these patients the bladder itself is very irritable, and resents prolonged operation which is necessary for its complete evacuation, whilst its loculi and rugæ render the task of finding all the calculi a most difficult if not impossible one. Added to this such bladders are always of large capacity, and often non-contractile, or only contract with difficulty, so that the fragments are not readily washed out from all their various lurking places. Guyon remarks that it must be borne in mind that the evacuator does not exercise much, if any, attraction for fragments more than an inch to an inch and a half from its eye, so that in these large bladders fragments are very likely to be left behind. M. Guyon cites the case of an old man in whom, after the removal of considerable masses of calculous matter, he found, a few days later at a second sitting, another large calculus which he had left behind quite unsuspected on the first occasion. A case of this kind is the more perplexing, as the cystitis from which such patients suffer is always greatly ameliorated by the first operation, thus leading the patient and the surgeon, if he is unsuspecting, to imagine that a complete cure has been effected. In some instances which he quotes, Guyon shows that the class of patients to which he refers even do better when treated as out-patients by frequent small crushings than when, with the additional security of bed and hospital treatment, the bladder is completely emptied at one sitting.—(Quoted in the *Supplement to the British Medical Journal*, Jan. 3rd, 1891.)

Society Proceedings.

MEDICO-CHIRURGICAL SOCIETY OF MONTREAL.

Stated Meeting, 23rd January, 1891.

F. J. SHEPHERD, M.D., PRESIDENT, IN THE CHAIR.

Continued from page 715.

Case 2.—In this patient very much the same conditions were present. He was an older (28) and stronger man. Consolidation at right apex. There had been slight hæmoptysis. Bacilli and elastic tissue in sputum. The temperature, taken every two hours day and night for six days before treatment began, never went as high as 99°. The best reaction was obtained from the second injection (of 0.002 c.c.), when the temperature reached 101°.

Case 3.—This was a case of tubercular laryngitis with left apex dulness. History of hæmoptysis. No bacilli. The temperature after the first injection went to 103°, but no such reaction has since been noted.

DR. JAS. BELL reported as follows:—

(1) G. M., aged 6 years, a waif left on the wharf in the autumn of 1889, with advanced hip-joint disease and scrofulous sores about the face, neck and body. In May, 1890, the hip-joint was excised, the whole head and neck of the femur and the upper two-thirds of the great trochanter being removed. Patient recovered with a good, useful limb and good mobility. During the summer he developed tubercular disease of both testicles. The left, which was completely disorganized, was removed in November, and the right, which was simply felt as a hard nodular mass of epididymus, was left alone, as it seemed to be in a quiet, non-progressive condition. Good recovery followed operation. Patient was injected on December 23rd, the dose given being .0002 grm.; no reaction followed. On the 29th he was injected again, the dose being .0003 grm. Only slight general and no local reaction followed, the temperature only reaching 99°. Injections then discontinued.

(2) C. H., aged 25. Suppurating disorganized testicle.

Diagnosis doubtful. No family history of tuberculosis. History of posterior gonorrhœa for about six months, when acute orchitis supervened, ending in suppuration in August last (1890). Hardness of epididymus and pus discharging sinuses remained. Injected on December 25th dose .002; no reaction. Dec. 27th, injected again dose .004 grm.; slight heaviness and temperature rose to 99°F.; no local reaction. Injections were then abandoned and the testicle removed a few days later. The testicle (shown at the meeting) was literally filled with tubercles, which were pronounced by Dr. Johnston to be not of very recent origin, and not attributable to the injections.

(3) N. B., aged 26. Diagnosis doubtful. Thought to be tubercular disease of the bladder and kidneys in an early stage. Symptoms: frequent and painful micturition; blood in small quantities at end of micturition; urine containing pus in considerable quantities; intense albuminuria; emaciation. Symptoms lasting 2½ years, and coming on as a sequel of posterior gonorrhœa; temperature ranging from 99° to 100°F. before injection. Injected on the 21st of December dose .002; no reaction, general or local. Again on the 22nd, dose .004; no reaction, general or local. Injections discontinued and patient discharged at his own request.

(4) A. M., male, aged 25. Had suffered for five years from bladder irritation, with pus and blood in urine. Never had gonorrhœa. Left testicle had all the characters of tubercular disease of that organ. A nodule had existed in the lower end of the epididymus for more than a year, and a little local suppuration had occurred twice, leaving a sinus which discharged for some time. Sinus was now closed. In September a perineal section had been performed, but had failed to give him relief. On the 1st of November Dr. Bell had opened the bladder above the pubes, and with the aid of the electric light scraped and cauterized several tubercular ulcerations around the neck of the bladder. The bladder wall was found at that time to be studded with tubercles which had not yet broken down. Prompt and satisfactory relief had followed the operation, and the patient's general health had improved greatly. Patient was injected on

account of the tubercular testicle and the tubercles known to exist in or beneath the mucous membrane of the bladder. He was injected as follows: Dec. 20th, .001 grm.; slight local and general reaction. Dec. 21st, .004 grms; marked febrile reaction, pain and tenderness in testicle, and increase in pus and albumen in urine. This patient was injected again as follows: Dec. 24th, .006 grms.; Dec. 30th, .008; Jan. 19th ('91), .006. The same symptoms of local and general reaction followed each injection, and after the last injection some blood was found in the urine for the first time since the suprapubic operation, performed on the 1st of November. This patient is enthusiastically hopeful, and has gained three pounds since the treatment began. As his general health has been steadily improving since the operation on the 1st of November, and no observations as to his weight had been made prior to the use of the parataloid, this slight increase of weight must not be given too much prominence as an evidence of the curative effects of the remedy.

(5) A. D., a little French-Canadian child aged 5 years, suffering from a tubercular knee-joint of eighteen months standing, but in an early and quiescent condition, so that the child could walk almost without a limp, and could extend the leg fully. This little girl had been under observation for eight days before any injections were given her. During this time she was carefully examined, and her temperature, which was taken every four hours, was uniformly normal. She was given the first injection 24th of December; dose, .0002 grms.; distinct local and general reaction followed. The knee became red, hot and painful, and increased a quarter of an inch in circumference, while the temperature rose to 101°F., and the child was very drowsy and sick at her stomach. The reaction began about eight hours after the injection, and the temperature had reached the normal again within 24 hours. The knee, however, remained a little tender, and lay in a position of increased flexion. She was injected again as follows: Dec. 28th, .0003; Dec. 31st, .0004; Jan. 8th (1891), .0005; Jan. 14th, .0005; Jan. 19th, .0005 grms. —six injections in all. The same symptoms and local signs followed each of these injections—the knee on one occasion in-

creasing three-eighths of an inch within a few hours, and the highest temperature reached being 103½°F. The local manifestations on each occasion subsided a little later, and less decidedly than the constitutional symptoms. At the present time (Jan. 23rd) the knee is half an inch larger than when the first injection was given. The knee is semiflexed, and is painful and tender, so that the child cannot be induced to put the foot to the floor, nor can she allow the leg to be extended. In short, the knee has grown very rapidly worse under the treatment.

In recapitulation, Dr. Bell said that while the first case was beyond all doubt a markedly tubercular child, no reaction had followed the injection. This might be explained, however, by the fact that all the tubercular lesions, with the exception of the right testicle, had been removed. The second case had not reacted, although the testicle, when removed, was filled with tubercles which must have developed within six months. The third case was doubtful, and, although no reaction followed the injections, was probably tubercular. The fourth case showed clearly that a change of some kind had taken place in the diseased organs. The fifth case, however, gave the most undoubted evidence of the power of the parataloid, but this power was shown, so far, not in a curative effect, but the reverse, as the joint disease had been apparently greatly aggravated by it. On the whole, no cures had been effected, nor even distinct improvement, nor had it proved serviceable as a diagnostic agent, but, with possibly one exception (the last case), no ill effects had been observed from its use.

Dr. Johnston said that he had examined the sputum daily for tubercle bacilli in Dr. MacDonnell's three cases ; Dr. Smith, house physician to the General Hospital, having assisted him in preparing the specimens. The sputum had been examined daily for a week before commencing the treatment. Up to the time of speaking no change had been noticed in the sputum. The number of bacilli had remained stationary. In the case of tubercular laryngitis no bacilli had been detected. The testicle extirpated by Dr. Bell had the ordinary appearances of a tuberculous testicle. Microscopically it showed no unusual amount of necrosis.

In one of the cases of lupus, that of the old woman, tubercle bacilli had been found in the sections, but were very scanty. The lupoid tissue was free from any unusual appearance. In the other lupus case, that of the young girl, there was marked proliferation of the endothelial cells in the small vessels, showing an intense, acute inflammation. These observations confirmed the statement which had been made that the action of the lymph upon human tuberculous tissue was quite different from what had been observed in the case of guineapigs. In the human subject the condition seemed to be one of irritation, not degeneration, about the young tuberculous tissue. The effect of the treatment upon the sputum would only be secondary, as the living tuberculous tissue did not come away with the sputum.

Discussion.—Dr. McConnell remarked that he had seen some good results from the treatment. To get a good effect from the remedy he considered it necessary to build up the system. In Dr. Bell's case of tuberculosis of the testicle, he thought that from such a small amount of tuberculous material we could not expect much reaction. He would present his report on the subject at some future meeting of the society.

Dr. Mills referred to a case of hemorrhage which had occurred after the injection of Koch's lymph.

Dr. Hingston said that he had just begun the injection of the lymph. He thought that it was still in its probational period. Dwelling upon lupus, he remarked that one thing seemed to have been forgotten, and that was, that some cases of lupus without any treatment whatever will get well. Dr. H. could recall several cases during his practice of cure. He agreed with Dr. MacDonnell that patients with tuberculosis of the lungs should be selected with great care, and should be examined for days and days before the Koch treatment was adopted.

Dr. Shepherd, referring to the case of lupus in the old woman, remarked that she had previously been under his care for seven or eight years. The diseased area had been cauterized and scraped several times. She had improved temporarily. Since the injection of the lymph had been begun he considered her condition worse. In the second case of lupus, that of the young

girl, after the injections had been discontinued for two weeks, there was a great reaction, which probably shows an accumulative action in the lymph. He had not yet seen any report of absolute cure of lupus from this treatment. The Vienna results had not been very promising. There had only been one case of apparent cure. As to its diagnostic power, reaction had been noticed in cancer cases in New York. It was also known to light up latent tubercular foci.

Dr. Roddick asked Dr. G. T. Ross if he had seen in Berlin any operation performed for surgical tuberculosis subsequent to the use of the lymph; also, if he had seen any autopsies on other cases than pulmonary tuberculosis; and, thirdly, whether the accumulative effect had been noticed.

Dr. G. T. Ross said that he had seen slight hemorrhage follow the remedy, which had to be discontinued for a few days. Many of the cases which he had reported had been carefully examined by able men before the injection of the lymph was commenced. He admitted that good diet and good surroundings improved many cases of phthisis, yet he believed that the improvement in the cases that he had seen was to be attributed to the lymph. He had not seen any surgical operation after this treatment, nor post-mortems in any other case than that of phthisis. Referring to the results that had been obtained here, he believed that the dosage had been too small, particularly in cases of local tuberculosis.

Dr. Bell stated that the dose, though small, had produced very severe reaction.

Dr. Roddick remarked that in a case of lupus injected with $\frac{1}{10}$ cm. slowly increased had produced great reaction. He had seen one case in Baltimore where the patient, after the injection of $\frac{2}{10}$ cm., had become seriously ill.

Examination of Sputum for Tubercle Bacilli.—Dr. Johnston demonstrated the method of examining sputum for tubercle bacilli which he employed in the Montreal General Hospital. The cover-glasses were smeared with sputum by means of a thick platinum wire, the end of which had been flattened out to form a small spatula. When dried, it was fixed in the usual way by passing

through a flame. The staining was effected by placing a drop of carbol. fuchsin solution (magenta, 1 gramme; alcohol, 10 c.cm.; 5 per cent. carbolic lotion—90) upon the smeared side of the cover-glass and holding it in a small flame till bubbles rise, allowing it to boil gently for half a minute or less. After spilling off the excess of staining fluid, the cover-glass was immersed in acid methylene blue (methylene blue 2 grammes, 25 per cent. by volume; sulphuric acid 100 cc.), and allowed to remain there for one minute. It was then examined directly in water, or could be dried and mounted in balsam if desired. In most cases this examination could be made in less than five minutes.

Stated Meeting, February 6th, 1891.

F. J. SHEPHERD, M.D., PRESIDENT, IN THE CHAIR.

Hæmatoma of the Ovary.—DR. T. J. ALLOWAY exhibited two interesting specimens of hæmatoma of the ovary. In one ovary, the larger of the two, a cavity existed in the oöphoron portion of the ovary which contained about three drachms of dark, tarry blood. This cyst ruptured on the ovary being brought to the surface for ligature. In the second specimen the cavity of the ovary contained a hard, dried, coffee-colored blood-clot about the size of a marble. Dr. Alloway said that the ladies from whom these ovaries had been removed were young women between the ages of 25 and 30, one married and the mother of one child. They were chronic invalids, and had been so for some years. The first case was operated on ten months ago; she was now in robust health and acting in the capacity of trained nurse. The other case had been but recently operated upon, and was improving. He said thet he had now exhibited three cases of this rare pathological condition before the Society. He thought the condition more common than was generally supposed. The symptoms were the same as those seen in hyperæmia of the ovary and chronic ovaritis unless rupture takes place, when alarming shock and collapse will follow, according to the amount of blood lost. He had no doubt that follicular hemorrhage was a frequent cause of intra-peritoneal hæmatocele. It was due to

excessive ovarian congestion and escape of blood from the larger deep-lying veins into one or more ruptured vesicles. The number and size of the hæmatoneal sacs were in direct proportion to the extent of congestion.

Contortion of the Fallopian Tubes.—Dr. Alloway also exhibited this specimen. He explained that this is a twisting or bending of the tube upon itself irrespective of inflammatory adhesions. He said that Dr. Haultain of Edinburgh had recently drawn attention to this peculiar condition, saying that it was, in his experience, the most frequent morbid condition of the tube met with, and that it gave rise to very distressing symptoms. Sterility and dysmenorrhœa are the two principal associated conditions found in connection with *contortion* of the Fallopian tubes. In regard to the ætiology of this lesion, he said it was very difficult to offer an explanation, but it was thought that it had something to do with developmental irregularity. Before birth the Fallopian tube is in a state of contortion similar to the specimen exhibited, and it is not till puberty that, by a gradual process of straightening, it has acquired its normal undulating form, so that this condition may really be a continuance of the fœtal state. This, however, would not explain cases that occurred after pregnancy had taken place, but under such circumstances it is thought there was an inherent tendency on the part of the tube to return to its fœtal state.

Aneurysm of the Aorta simulating Aneurysm of the Innominate.—Dr. R. L. MacDonnell related the history of the case, which was briefly as follows: W. H. (colored), aged 33, barber, was admitted to the hospital in October last with an apparent pulsating tumor over the innominate artery. The patient had formerly been a Pullman car conductor. There was no history of syphilis or intemperance. In August last he began to suffer with severe pain in the right side of the neck, and behind the right ear; subsequently pain was felt in the upper axillary region of the chest, and in the right shoulder, which he believed to be rheumatism. He then came under the notice of Dr. J. A. MacDonald, who advised him to enter the hospital. On admission there was slight bulging of the chest, and dulness on percussion

over an area of two and a half inches in diameter, occupying the space between the clavicle and the sternum. The pulse was not perceptible in the right radial, brachial, carotid or temporal arteries. There was tracheal stridor and weak breathing at the left pulmonary base ; no tracheal tugging ; no laryngeal paralysis. The diagnosis was aneurysm of considerable size involving the innominate artery, and possibly the ascending arch. The absence of tracheal tugging and laryngeal paralysis, together with weak breathing at the base of the left lung, rendered an involvement of the transverse arch highly improbable. No symptoms pointed to the third part of the arch or the thoracic aorta. In Dr. MacDonnell's experience, the tracheal tugging was met with when the transverse arch was enlarged and rested on the left bronchus against the angle which that tube forms with the trachea. When the aneurysm occupied a point on the transverse arch beyond the crossing of the left bronchus, the tracheal tug was not perceptible ; since the tumor dragging down the loop formed by the vagus and the left recurrent nerves (which bend around the aorta behind the root of the left lung) produced pressure upon the left bronchus from behind, this pressure was incapable of making a pulsatile impression on the left bronchus such as to be transmitted to the larynx. The patient was put to bed and 10 grains of the iodide of potassium ordered daily. He left the hospital Dec. 6th, feeling much better, almost free from pain, and no apparent increase in the size of the tumor. He was readmitted Jan. 23rd with great dyspnœa ; the tumor had increased considerably in size, bulging from the chest-wall as large as half a cricket ball ; it was pulsatile, and its walls were thin. The pulse in the right wrist was now present, though small. Death took place in six days. The reappearance of the pulse was attributed to the rapid enlargement of the tumor in the direction of the front of the chest, which relieved, in a slight degree, the pressure upon the innominate, and allowed the blood to flow again through the vessels.

Dr. Johnston exhibited the specimen. It was situated at the junction of the first and second part of the arcus aortæ. The innominate lay just within the sac ; another sac lay in direct

contact with the innominate artery all the way to its bifurcation, and was closely bound to it by inflammatory connective tissue. The sac was as large as two fists, and had eroded the first and second ribs in the right supra-clavicular region. The anterior wall of the sac was formed by the pectoralis major. The sac contained a large amount of fibrin, not very firm. The great arteries and veins were free. The sac lay in front of the trachea and pressed upon the right bronchus. The left bronchus was quite free of the tumor. The recurrent laryngeal nerves were normal. There was intense tracheitis, with an ulcer on the anterior wall of the trachea one and a half inches above its bifurcation. There was acute broncho-pneumonia of the right lung.

Dr. James Bell was interested in the case, inasmuch as the patient had originally been sent to his wards for surgical treatment. Ligature of the carotid and subclavian had suggested itself, but an examination revealed the fact that these arteries were already occluded. The absence of syphilis in the history, and of any atheromatous change in the vessels, together with the comparative youth of the patient, were very remarkable. He spoke of the cases recently reported by Macewen where the formation of white clot was artificially produced by pricking the sac through and irritating its inner surface with fine needles. Encouraging results had followed this treatment in the four cases reported by Macewen, in two of which the results were verified by subsequent post-mortem examination.

Dr. Geo. Ross regarded the case as being most interesting, but it was not in his experience a very unusual thing to find innominate aneurysm closely resembling in its symptoms and physical signs aneurysm of the arch, or *vice versâ*, and he had already a case closely resembling that brought before the Society by Dr. MacDonnell. A correct diagnosis was impossible under the circumstances of this case. The points brought forward by Dr. MacDonnell with regard to tracheal tugging were interesting, though he was not prepared entirely to agree with the opinions expressed. He was under the impression that tracheal tugging could be produced by an aneurysm pressing upon the

trachea from in front and exerting pressure downwards as well as backwards. He must, confess, however, that the result of the autopsy in the case before the Society strongly supported Dr. MacDonnell's view of the causation of this physical sign, and the aid it could afford towards the localization of the tumor. In the present state of our knowledge relating to the localization of thoracic aneurysms, surgical interference with innominate aneurysms will always be extremely hazardous. It is very desirable that all cases presenting themselves, in which it is difficult to determine whether a given aneurysm is innominate or aortic, should be most carefully examined and reported, so that some points might be determined by which to establish the diagnosis.

Round Ulcer of the Stomach causing Fatal Perforation.—Dr. R. L. MacDonnell stated that the patient, a woman, aged 59, had been under his care in the Montreal General Hospital up to about ten days before her death. Her case was interesting in the duration of the symptoms. The patient, who had been a needlewoman, began to suffer from pain and distress after food, with occasional vomiting, some twenty years ago. She was supposed to have dyspepsia up to 1877, when she was first seen by Dr. G. E. Fenwick, who noticed the "coffee-ground" appearance of the vomited matter. He elicited from the patient that she had been vomiting a darkish fluid for some years past. She was then suffering from severe pain in the epigastrium, vomiting after food, and hæmatemesis when she entered the hospital, and was under treatment for gastric ulcer for six weeks. She derived much benefit. With the exception of slight epigastric pain, she remained free from severe symptoms until 1888, when she was again admitted complaining of severe pain and vomiting after food. There was no hæmatemesis. She recovered, and continued apparently well till the beginning of this year, when she again applied to the hospital with symptoms of gastric ulcer. She was admitted under Dr. MacDonnell. The patient was now much emaciated; the abdomen was very flat, and its walls extremely thin. There was diffuse tenderness over the epigastrium; no tumor perceptible. The patient was kept in bed several days

and her symptoms carefully watched. Milk diet was ordered. Gastric distress was noticed to increase until evening, when vomiting gave her relief. It was thought that the symptoms pointed to cicatrized ulceration, which was probably delaying the advance of food through the stomach. A soft tube was therefore introduced every day at 4 P.M. and a pint of water slowly passed through it. The discomfort was relieved, no vomiting occurred, and she was able to sleep without epigastric discomfort or pain. At the time of her leaving the hospital she was free from pain and able to take most of the common articles of diet without discomfort. On her return home she ate freely of what was going, when she was taken suddenly ill, and in a few minutes was in a condition of collapse. She was seen by Dr. W. G. Stewart. There was very severe pain at the epigastrium, and copious vomiting of a "coffee-ground" fluid. He was aware previously that the patient was the subject of gastric ulcer. He was unable to afford her any relief. At the autopsy, when the abdomen was opened, the ulcer was plainly visible in the right half of the epigastric region, and it presented a decidedly punched out appearance. The ulcer was situated near the pylorus, close to the lesser curve; its edges were raised, and there existed much thickening of the surrounding gastric wall. The stomach was moderately dilated. The abdominal cavity contained about a pint of "coffee-ground" fluid similar to that which had been vomited. There were evidences of general peritonitis.

Obstruction of the Cystic Duct; Cancer (?) of the Gall-Bladder.—DR. JOHNSTON exhibited this specimen for Dr. Molson. It showed a large calculus the size of a pigeon's egg in the cystic duct, two inches above the junction with the common duct. A small calculus the size of a bean lay just at the orifice of the ductus communis choledochus. In the region of the gall-bladder was a ragged, fibrous mass as large as an apple. Examination of this tissue under the microscope showed a dense fibrous stroma, in which a large number of lymphoid cells were found. The microscopic appearance of the growth was not that of cancer.

DR. MOLSON remarked that the patient was 64 years of age;

fairly well nourished. There was a history of frequent vomiting, which always yielded to careful dieting. Two weeks previous to her death there was incessant vomiting, which proved uncontrollable, although every remedy that could possibly relieve her had been tried. There was no pain, no sign of jaundice, and nothing could be made out by examination. The patient gradually died of asthenia.

Dr. Campbell asked if there had ever been any history of biliary colic.

Dr Stewart wished to know how Dr. Molson explained the vomiting.

Dr. Shepherd remarked that, according to Tait, jaundice was of rare occurrence with only one or two calculi in the gall-bladder. He believed the condition might have been benefited by an operation.

Dr. Molson replied that there had been no history of colic, and that the vomiting was probably purely reflex.

Diabetic Coma.—The subject of acetonuria having formed the subject of an interesting paper recently read before the Society prompted Dr. J. A. Hutchison to report a case of diabetic coma which had lately been under his care :

J. D., aged 50, was brought home from work in the morning of Nov. 13th in an exhausted condition. When seen by Dr. H. he complained of loss of appetite and constipation. On the following day the patient was very drowsy, and could only be aroused with difficulty. The case now appeared to be one of uræmic intoxication. The patient's previous health had always been good. He had been a soldier, led a fast life, and drank a great deal, but for the past twenty years he had been steady and regularly at work. There was no history of syphilis. For twelve years he had been passing an abnormally large amount of urine, but no attention was paid to it. Lately the amount of urine increased ; there was marked loss of appetite, great thirst, and obstinate constipation. The patient was now considerably emaciated ; the skin dry and sallow. Four to five quarts of urine were passed a day. It was of a pale straw-color ; spec. gr. 1032. Fehling's test gave a large deposit of oxide of

copper. On Nov. 19th, the third day under observation, the patient felt better and was able to move about the house. On the morning of the 20th he became very dropsical; breathing was slightly stertorous, and the pupil of one eye dilated (the other eye had been destroyed some years ago). The pulse could be faintly felt at the radial. During the day coma increased until death ensued at seven o'clock that evening, one hundred and twelve hours from the time he had left his work. The urine had been chemically examined by Dr. Ruttan. No acetone was found.

Dr. Hutchison remarked that the case was interesting to him from the fact that such advanced disease should have given rise to so few symptoms, that a physician was never consulted until a few days before death. An abstract of the autopsy performed by Dr. Johnston was as follows: "Body of a spare, emaciated man; skin sallow, rough and dry. Heart and lungs showed nothing special. There was slight cloudy swelling of the kidneys, with several large clear cysts in the centre of each organ. Intestines and stomach were normal. The supra-renal capsules and semilunar ganglia showed no gross pathological changes. Brain: pia, thick and opaque over the convolutions, was readily detached; subarachnoid fluid was abundant, and the posterior cornuæ of the lateral ventricles were dilated. Throughout the cortex, as well as the white matter, ganglia at the base and medulla, the brain cut with resistance. This was probably due to an atrophic change, with a relative increase of the connective tissue."

Cystic Degeneration of the Placenta.—Dr. C. O'Connor exhibited this specimen, which showed extensive mucoid change and enlargement of the villi of the chorion. The patient, aged 32, had been delivered of two full-grown children. There was no history of syphilis. On examination the os was found partially dilated, placenta presenting, and considerable bleeding. The vagina was tamponed and Dr. Telfer called in, who anæsthetized the patient. The os was dilated with the fingers, and an enormous quantity of cysts removed, sufficient to fill an ordinary wash-basin. The uterus then contracted firmly and the hemor-

rhage ceased. Creolin douche was given and an hypodermic of ergotin. The loss of blood had been considerable ; the patient was blanched, almost pulseless, and the extremities cold. Frequent hypodermics of brandy were given. At eleven o'clock next morning the pulse was 126 and temperature 99°. She steadily improved and made a good recovery.

Dr. Telfer confirmed Dr. O'Connor's report.

Dr. Reddy, in referring to these cases of cystic degeneration or hydatidiform mole, believed that there was a loss of vitality in the ovum, which disappeared early, and the placenta went on to cystic degeneration.

Correspondence.

JAUNDICE AS A COMPLICATION OF TYPHOID FEVER.

To the Editors of The Montreal Medical Journal.

Sirs,—In the report of the meeting of the Medico-Chirurgical Society of the 9th of January which you give in your March number, I am represented as stating that "jaundice in typhoid fever was not rare, though not often seen here." This is not the meaning I intended to convey, though I have no doubt the words are correctly reported. Jaundice is a very rare complication, and I can recall but one instance of its occurrence. In that case the patient was pregnant and there was an overloaded colon, so that a mechanical cause might have existed. Dr. Hutchinson. the author of the article *Typhoid Fever* in Pepper's System of Medicine, says that he has never seen this complication, and is inclined to think that it is very rare in America. Murchison met with but three cases, all of which were fatal, although in two the jaundice had disappeared before death. Altogether he could collect but nine cases, all of which were fatal but one. Griesinger observed jaundice in 10 out of 600 cases, and several of them recovered. Hoffmann (quoted by Hutchinson) found it in 10 out of 250 cases ; Liebermeister in 6 cases out of 1420.

I quote the figures to correct the wrong impression my words may have given to those of the Society who were present on the evening in question, as well as to those who have read the words reported.

Yours very truly,

R. L. MacDonnell.

Montreal, *March 7th*, 1891.

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CANTHARIDATE OF POTASSIUM IN TUBERCULOSIS.

Prof. Liebreich of Berlin has introduced the cantharidate of potassium as a remedy for tuberculosis, and judging from certain results obtained by Heymann and others, it appears that it does possess some power. Heymann has treated twenty-seven cases of laryngeal and pulmonary tuberculosis with this agent, and with results said to be fully better than with tuberculin or any other mode of treatment. After the third or fourth injection the general state was found to be improved. In the laryngeal cases the pain and hoarseness rapidly diminished. The laryngoscope showed first a diminution in the redness, and in three or four cases the ulcers eventually healed completely. In the pulmonary cases, there was in the great majority a marked change for the better in both the local conditions and general symptoms.

Fraenkel has treated fifteen cases of tuberculosis with the cantharidate of potassium. He gives the details of a case of extensive tuberculous ulceration of the larynx with œdema of the surrounding parts and accompanied by severe pain on swallowing. After a few injections the pain and swelling disappeared. In all the cases treated, the action of the cantharidate salt was marked.

Fraenkel considers that it acts by direct action on the tubercle bacilli, while Landgraf suggests that it is partly owing to the action of the cantharidin in increasing serous exudation and mechanically washing away the detritus.

The dose of the potassium salt recommended is very small, being from 0.0001 to 0.0004 of a gramme; 0.0002 being a medium dose, or about the 1-300th of a grain.

The cantharidate salt is directed to be made as follows: 0.2 g. of cantharidine and 0.4 g. of potassium hydrate are placed in a vessel of the capacity of 1,000 c.cm. and containing 20 c.cm. of water. The vessel is heated in a water bath until the solution becomes clear, and then cold water is added to make 1,000 c.cm.

As cantharidin is not a chemically pure body, it is not possible to exactly estimate its dose. A sodium cantharidate solution may be made in the same way as the patassium solution; 0.3 g. of the sodium hydrate are, however, sufficient to make a clear solution, with 0.2 g. of cantharidin.

The recent unhappy experiences of surgeons and physicians in connection with tuberculin will make them very cautious in accepting any premature statements regarding the cantharidates or any of the other agents recently recommended for tuberculosis. If there is any virtue in the cantharidates, it will not be long before it is known.

THE MEDICAL FACULTY OF COLUMBIA COLLEGE.

The College of Physicians and Surgeons of New York will, in future, be known as the Medical Department of Columbia College. This will enable this flourishing medical school, it is said, to make a four years' course compulsory on all its graduates. Columbia College agrees to spend during the first year the sum of $120,000 on the medical school.

A very important part of the agreement between these two bodies is the retention of the power by the medical school to appoint all her own teachers forever. This will ensure a succession of the ablest staff obtainable, a result not likely to be attained when the appointments rest in the hands of the general University Board. The union will have an important influence on the promotion of higher medical education in the United States, and for this reason is to be hailed with gladness by the entire profession on the continent of America.

Medical Items.

—Surgeon Parke, who served in Mr. Stanley's African Expedition, has been appointed a vice-consul in the Oil Rivers Protectorate.

—Mr. Thomas Bryant has been elected a representative of the Royal College of Surgeons on the General Medical Council, in place of the late Mr. John Marshall.

—Mr. C. S. Sherrington, Lecturer on Physiology at St. Thomas Hospital, London, has been appointed Professor Superintendent of the Brown-Institution, vice Mr. Victor Horsley, who has resigned.

—An International Congress of Hygiene and Demography will be held in London in August next. Canadian physicians are cordially invited to attend and read papers on hygiene or any allied subject. Dr. Corfield is the general secretary.

—A discussion on "The remote effects of removal of the uterine appendages" will take place during the meeting of the Surgical Congress to be held in Paris during the present month. Mr. Lawson Tait has been requested to open the debate. It is about time we were obtaining from gynæcologists detailed and definite information on the ultimate results of these cases.

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Original Communications.

ADDRESS

DELIVERED TO THE GRADUATES OF THE MEDICAL FACULTY OF McGILL UNIVERSITY, AT THE ANNUAL MEETING OF CONVOCATION, APRIL 1, 1891.

BY G. P. GIRDWOOD, M.D.,
Professor of Chemistry, McGill University.

Gentlemen Graduates,—The ancestral acres unscored by the plough have been left by you. You have not been allured by the dust and excitement of the Olympian games, with all the pomp and circumstance of war. In vain old Neptune has spread before you the great and varied enticements of a "life on the ocean wave." The blandishments of the forum and the quibbles of legal fiction, with all its subtleties, its narrowing down of argument to the one hypothesis, have had no attraction for you. The mysteries, superstitions and narrow bigotries of theologians need exponents of a different metal to that of which you are made. Instead, you have registered yourselves as students of Minerva, as worshippers at the shrine of Hygeia, and have but just now been admitted as brethren in the priesthood of the temple of Æsculapius. With truth, wisdom and health for your science, and healing for the practice of your art, I wonder not at your choice. The varied sciences you have to cultivate gives you a breadth of study and basis upon which to form your opinions possessed by no other profession. Like a man engaged in mixed farming, his knowledge of the art is greater than if he confine his energies to one kind of produce only, so as you press

into your service every kind of science as aid, assistant or minister to your own, do you enlarge its scope and usefulness. In the present day the division of labor is carried to a great extent, so much so that fifty years ago we had shoemakers who could make a pair of shoes from beginning to end, and we had shoes; but now-a-days to make a shoe requires about twenty men, women or children, each one runs a machine and becomes perfect in that work, but can do nothing else, and the shoemaker will soon be a man of the past. So with other trades; and thus also is it rapidly becoming in the medical profession. We have specialists for almost every part of the human frame, and who start out and practice their specialty from the first. If this goes on unchecked, we shall arrive at special hospitals, special treatment, special everything until the good old general practitioner becomes a man of the past. I warn you, therefore, gentlemen, to study all parts of your profession equally, and if in course of your practice, from circumstances or inclination, you desire to treat or become more familiar with any particular kind of disease that man is heir to, then you will be at liberty to take up the specialism. Another matter: We used, in my young days, to seek a specialist with our patient. He gave his opinion, and the general practitioner saw that this special treatment was carried out; there was a mutual understanding between the family attendant and the specialist. Now the specialist asserts himself as something superior to the family physician and ignores him altogether, although for the welfare of the patient a mutual confidence may be necessary. Be warned, therefore, against such practice in time, and if you desire to practice a specialty, do so only after a time spent in the study of the human system under treatment for disease in general, so that you may be able to understand better what special abberations may require, what constitutional treatment, and what special lesions may be the result of constitutional infirmity; and in this matter seek the advice of the family physician, who is familiar with the history of your patient.

It is now nearly twenty years since the Faculty of Medicine did me the honor of asking me to address the then graduating

class, and again revolving years have brought me before the present class of graduates to offer on behalf of the teaching staff their congratulations on the attainment of the measure of success you have so hardly earned, the degree you are justly entitled to as the climax of your four years' hard study, and which has just been conferred on you. A fortnight ago you were in the agony of confident certainty, confident hope, hope, misgiving, doubt, despair at the prospect of the result of the test of merit you were about to undergo, alternating from moment to moment, as some brother student asked a question or propounded a problem which you either answered glibly or were unable to solve. But now, having answered to the satisfaction of your examiners, and taken the oath of your college degree, and gone through the formality of having the mortar board and tassel shaken over your heads, you are dubbed "doctor," and away you go to put in practice, on your suffering fellow-man, woman or child, those principles of your art you think you have mastered. But e'er you go and we see but little more of you we would say a few words at parting.

The curriculum laid down for the pursuance of the student of medicine in this University requires to be completely worked out by him. If he would be successful in his practice he must be a constant observer and student of nature,—nothing is too small, too insignificant to be passed by or neglected by him. From the smallest circumstance the greatest results may arise. Man with his erect stature, wonderful mechanism and diversity of mental attainments, together with the varied forms of all animal life, the beautiful and complex forms we see in the wonderful carpet of verdure with which Nature clothes and adorns the earth, the marvellous interwoven forms of crystals glistening with the splendors of the rainbow as they reflect the light at different angles,—all are but the development of the potentiality of the single spherical mass of matter acted upon by opposing forces in different directions. The study of these spherical cells and the forces acting on them externally and internally are the objects and conditions for your investigation. You must not consider that now you have taken your degree your studentship is over;

it is but just beginning; you have only learned to observe, how to observe, and what to observe; you have only thus far the experience of others to guide you, you have to add thereto your own experience, that you may increase the general store of knowledge, and hand down principal, with compound interest, to your successors. The oft-told tale of how to conduct yourselves in the course of your career I need not repeat, but will refer you to other addresses, and with your permission, and in order that I may the better fulfil the request of my colleagues to "cut it short," pass on to some other considerations that come to my mind. You have been four years with us and are now leaving. During that time you must have seen that there is a large amount of practical work exacted in your career, and that this is supplemented by didactic teaching. You must have noticed that the majority of students come but ill-prepared to carry on the work before them, that to a large extent they are like the militia recruit joining the regular army, of whom the drill sergeant said, "Lor' bless you, sir, the militia aint no place to teach a man 'is drill. Why the fust thing as I 'as to do is to unlearn 'im what 'e 'as been teached." And so you find that the teaching of the schools is for the most part theoretical and not practical; in fact, that the majority have not been educated but "teached." I am not speaking of those bright students who come knowing what to do from the first, from the first make their mark amongst their fellows, and who, at the end of the curriculum, appear as the honored captains, but of the general run of students who come fresh from school and who scrape through their matriculation examination to find that they ought really to be going to school and learning how to learn, instead of being at college. I think you will agree with me that we want a higher standard of matriculation and of school education that young men may be better prepared for all walks of life. Passing onward, you must admit we do a great deal of practical work, but that more would be advisable, that some of our didactic work might, perhaps, make way for practical work, or, at any rate, more practical work got in somehow with advantage.

Twenty years ago we emerged from chrysalis form and burst

the shell of our then faculty, the accommodation having become too small, and blossomed out in the front half of our present buildings; but with additional room and added classes our numbers grew, and again we burst our shell, and this time keeping part of the old shell we enlarged it to its present dimensions, and even now you see it is not more than half large enough for our present accommodation, and if our numbers go on increasing as they must, and the increasing demands of education require greater facilities and an increased teaching staff and room for original research, we must again burst our shell and occupy tents around the home.

Our duty to the public requires us to keep pace with the improvements of the age. Fifty years ago, reasoning from analogy, our teachers of that day had recognized the similarity between ferments and disease, so that the specific fevers were looked upon as the result of ferments acting in the system. The advancement made in the manufacture of microscopes has enabled the workers of the present day to see and recognize the individual ferments producing those diseases, but the microscopist unaided could scarcely have made out these minute organisms but for the assistance of the chemist supplying the numerous dyestuffs, which have enabled the microscopist to stain the parts of these minute structures and thus to learn somewhat of their life and history, and thus to ascertain the causes of the diseases he has to treat. Knowing the cause, the physician may be able to find a remedy. The recognition that that fell disease, consumption, is the result of the attacks of a micro-organism, a bacillus, or a species of ferment, and its consequent communicability from one to another, has led to numberless experiments as to how to destroy the pigmy enemy, individually of no account, but by the immense development of the race becoming formidable by numbers. Under ordinary health man's own vitality enables him to resist the attacks or the insidious inroads of these hidden dangers, breathed or swallowed daily and hourly by all of us, and only when some predisposing cause weakens that vitality do we become subject to their influence. Hence it becomes necessary for you, as disciples leaving these halls of

learning, to preach to the public prophylaxis as the great means of obtaining longevity. How? By keeping the body healthy, by cleanly habits, preventing the growth of these microbes in a virulent type, starve them by leaving little or nothing for them to grow and develop upon, good healthy out-door exercise, moderate use of all luxuries, and such other means as you have been taught; but to do this you will have to be prepared with evidence to support you, and with pride you may turn to the results of the efforts of your predecessors, how the longevity of the race has been increased in places, as is evidenced by the decreased death rate and the decrease in the cost of life insurance. You have a noble fight before you; you have to be in front of the battle, fighting not only disease, but the ignorance and superstition of your fellow-man, and often at the risk of your lives.

You are now leaving your Alma Mater, and will in all probability find your occupations in all parts of the world. Keep a lively and loving remembrance of her and add to her renown in any way you can. Wherever you go you will find your path made easy by the reputation that has preceded you, a sequence of the good work done by your predecessors. See to it that you follow on in their footsteps, only stepping aside for a moment to gather more flowers of knowledge wherewith to adorn your Alma Mater. As disciples, you can help us by assisting in supplying her wants, and as you know them you can urge them whenever occasion presents itself. One of our graduates, Dr. Clemesha, has, out of the fullness which an active professional career has brought to him, presented us with a prize for clinical therapeutics. In the matter of prizes and scholarships we are badly off, and although medals are not considered of much use as incentives to exertion, we have always a number of hard-working students of limited means to whom a prize of a microscope or other implements he can ill afford to buy, or money scholarships to visit other schools after graduation, would be a boon. When you have the opportunity you may recommend some such remembrance of your Alma Mater to your wealthy friends or grateful patients. If it were optional with the student

to take a bronze medal in lieu of a gold one, and obtain the value in books or something more useful, as is done in the case of the Holmes medal, it would be a great improvement. By this and every other assistance you can render we hope to establish in this Faculty of our Alma Mater such an energetic potentiality as will develop a voltage sufficient to yield a constant million ampere current that will enable it to overcome the million ohm resistance of ignorance and superstition, sweeping away all obstacles, and, borne on by the resistless current of knowledge, at last be able to explain what now seems incomprehensible.

On referring, I find that twenty years ago I advised the then graduating class to get married. I have in those twenty years seen no occasion to alter that advice, but my expressed opinion on that point has been strengthened. How can you appreciate the tale of woe of a lost or wilful child if you have none of your own? How can you feel for the broken-up home of some reprobate, leaving his mate and little ones to the blighting influence of a cold, unsympathizing world, unless you feel the contrast? How can you feel for the little orphan, deprived of a parent's care, unless you have looked into the smiling face of your own innocent child? How can you feel for the bereft father of a family, deserted by their mother, unless you have felt the affection of your own well ordered home? These are some of the sorrowful tales which, as medical men, you may be asked to listen to and to act as advisers of the forsaken. How can you, bachelors, conjure up in imagination half the anguish which drives your unfortunate patient to the oblivion of the mad-house or of self-inflicted death? "How canst thou minister to a mind diseased unless thou knowest the malady," and have felt the exquisite pleasure of a home full of love and trust? You will be made the confidant of, and asked to sympathize with, every human suffering, whether of body or mind, and how can you do so unless you have felt the love of some one dearer still and still more dear than life itself? But when you have laid upon you such a burden as such a confidence will produce, you will find it lightened on going home to the "sweet, sweet love of daughter, of sister, or of wife."

Remember at all times if you want assistance your Alma Mater will always be ready to give it. Your interest and hers are identical. And now, in parting, we wish you all the health, happiness and prosperity you can wish yourselves. Fare-ye-well.

NOTES ON THE INSANE AND THEIR TREATMENT.*

By Wesley Mills, M.A., M.D., L.R.C.P., Lond.,
Professor of Physiology, McGill University, Montreal.

Perhaps in nothing is progress in civilization, and especially in practical medicine, better illustrated than in the great change that has taken place in our estimate of the real nature of insanity, and in the treatment of a class now universally believed to be of unsound nervous system. We cannot blink the fact that within comparatively recent times the behaviour of the insane was referred, not to organic or functional disease of the nervous system, but to agencies over which the medical man is supposed to have no control. And even yet the verdicts of juries and the decisions of learned judges are at times sufficiently astonishing.

While the change that has taken place is part of a general progress, it is especially due to the insight, the persistence, and the courage of a comparatively small part of the medical profession. In Canada this is especially true of one man, Dr. Joseph Workman, who has for a long period, through evil and through good report, upheld views which are now at last, happily in his own life-time, being extensively adopted.

Theoretically, it may be difficult to lay out the limits of sanity and insanity ; but, practically, there is seldom any hesitation in the mind of the expert as to whether a given individual is fit to mingle with his fellows at large, or whether he requires a special environment such as can be furnished by an asylum or special hospital alone.

The view of insanity advanced by Dr. Hughlings Jackson has impressed me as being in harmony with sound views of the physiology of the central nervous system. He believes that

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* Read before the Medico-Chirurgical Society of Montreal.

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INSOMNIA.

While Insomnia or inability to sleep is not a distinct disease, it is at times productive of much distress, and interferes so seriously with the proper performance of the functions of the various organs of the body, that the best efforts of the physician are demanded for its relief. Insomnia is generally the result of prolonged mental study or intense excitement. At other times it is due to the action of malaria upon the nervous system. It not infrequently follows the excessive use of tea, tobacco, alcohol, etc., due to arterial and nervous excitement caused by these agents.

Pathologically all cases of Insomnia can generally be divided into two classes, as that which results from nervous exaltation, characterized by an increase in the force and frequency of the pulse, and that which results from nervous depression, with a diminution in the volume of the pulse, often followed by an anæmic condition of the Cerebral Arterioles. The treatment to be successful must vary with the cause or pathological conditions present. Physicians are well aware that Opium, Chloral, Alcohol, etc., are often used and sometimes give relief, but the patient becomes habituated to the drug, must have the dose increased, and thereby a habit is formed for which the best efforts of the physician are called in to check, a habit which is worse than the sleeplessness for which the patient was treated.

Bromide of Soda and also the Potassium Salt is often used and great benefit has resulted. In the treatment of Neurasthenia great benefit has resulted from the use of the Bromides of Soda and Potash, especially when in combination with a salt that will counteract the depressing effects resulting from the use of Bromide. Such preparations are the Bromo-Soda and Bromo-Potash prepared by Wm. R. Warner & Co., and in the treatment of Nervousness, Debility, and Neurasthenia, which can generally be ascribed to Insomnia, they are especially efficient and agreeable. The Bromo-Soda preparation contains 30 grs. of Bromide of Soda and 1 gr. of Caffeine. The Bromo-Potash preparation contains 20 grs. of Bromide of Potash and 1 gr. of Caffeine. Physicians will readily see that the merits of these two preparations need hardly be questioned, and they cannot be disappointed in the therapeutic effects resulting from their use. They are put up in granular form, which makes a delightful effervescing draught, and gives the patient a desire to take these preparations, which are extremely palatable and beneficial. The preparation of Bromo-Soda was partly suggested by the late Dr. J. S. Jewell. Physicians have met with unfailing success in the use of Bromo-Soda in the treatment of nervous headache and the conditions resulting from an overworked and run down system. The therapy of the preparation need hardly be questioned, as by its use the patient feels a relief not given by any other preparation given for the same symptoms.—*New England Medical Monthly.*

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Elixir Salicylic Acid Comp. has been extensively used in private practice for several years with almost unvarying success and with better results than any other mode of treatment yet suggested.

It is a matter of great satisfaction to us to be able to place before the medical profession a remedy so effectual in the cure of one of the most stubborn classes of disease.

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insanity is essentially a lack of balance or an imperfect co-ordination of parts, rather than a positive disease of the whole brain. Certain centres may be normal, certain others more than usually active, with some decidedly disordered, and in forming a judgment on the case, the condition of the first two sets of centres must be considered as well as that of the latter.

My own personal experience with the insane is very limited. But last summer I had the opportunity of spending two weeks with the superintendent of the Kingston asylum, Dr. C. K. Clarke, and what I then became cognizant of, taken in connection with my own studies, impressed me greatly; and inasmuch as nothing has been brought before this Society on the subject of insanity for some years, it occurred to me that an account of some points in the treatment, more especially, of the insane might prove suggestive and helpful to the general practitioner. I believe I am correct in stating that there is no asylum in America more advanced in its treatment of the insane than this institution, a fact which is to be attributed largely, if not entirely, to the individuality of the man who is at the head of Rockwood Asylum. He believes that the insane can be treated entirely without personal restraint; and as a matter of fact, restraint, as commonly understood, is unknown among the six or seven hundred patients of the institution.

The treatment, so far as I can generalize it, seems to be based on the view that in the insane there is a tendency to very imperfect nutrition, and an undue concentration of the mind on certain ideas, a pronounced nervous instability, or great mental enfeeblement. These factors act and react on each other. At all events, the best results are not obtained from the use of drugs, but from special feeding, occupation, and amusement. This will appear from the detailed statements now about to be given. As to occupation, the superintendent says: "We endeavor to find something for every one to do, and on week-days have over 80 per cent. at work. Work has taken the place of restraint. The following occupations are pursued: farming, gardening, carpentering, quarrying, cabinet-making, broom-making, brush-making, shoemaking, tailoring, carpet-weaving, mat-making, blacksmith

work, tinsmith work, painting, bookbinding, etc., etc. The occupations above enumerated are followed by men exclusively, but, in addition, those patients who cannot be trusted outside are kept busy in the wards, and nearly all are drilled in classes and trained in calisthenics—such as dumb-bell exercise, parallel bar, etc. The brass band also furnishes occupation for about twenty, and these men are taught music, and, with one exception, the patients have received their rudimentary instruction here. The women are employed in the laundry, at sewing, knitting, spinning, mat-making, in the kitchen, milking, and picking fruit and small vegetables in the garden; but, of course, general ward-work and sewing are the chief things. We have no sewing-machines in the wards, and if a patient is not capable of much development she is given a little simple knitting and the work is pulled out at night. A great deal of fancy-work is done. The women also have a calisthenic class, are dressed, when exercising, in proper gymnastic suits, and made to march, go through bar-bell and dumb-bell exercises, etc., to music."

I am told, and it was perfectly evident, that one of the greatest difficulties in carrying out the modern methods of asylum treatment is to find occupations for all which are really suitable; and happy is the superintendent who has considerable practical knowledge of different trades, etc.

I was especially interested in watching the lowest class of the insane, the class that is also most dangerous, those with homicidal and suicidal tendencies, going through their drill exercises. A look at these people is sufficient to convince one that their brain development is very imperfect. They reminded me of the dogs I saw from which Professor Goltz had removed a considerable portion of the cerebral convolutions. They are in a large degree mere reflex mechanisms. They cannot possibly have the ideas and the control of human beings with more fully developed brains. Plainly, they are animals on an entirely different level. Yet drill has been found one of the most effective agencies in keeping them in as healthy a state as possible. Drill implies attention, volition, prompt obedience, co-ordination individual, and in relation to many others. It recognizes a head, marks off

the superior and inferior. The whole is closely related to manual training, and this will no doubt be eventually recognized as a most important means of developing both the sane and the insane. It is often found in schools that the best way to manage the over-active, the restless, the mischievous, or it may be the dull (for book-learning) boy, is to make him a monitor, or in other words, provide for the orderly expenditure of his energies instead of allowing them to become a source of disorder or positive evil. Probably the Greeks were not far wrong when they employed exercises with music to develop the perception of the harmonious in life.

But the insane, even more than the sane, must be amused,—diverted from fixed ideas. Fixed ideas do for strong minds. The genius is a man of fixed ideas ; but even he will make more progress with occasional diversions from his engrossing pursuits. Are not the vagaries of genius often attributable to this violent breaking away from absorbing ideas that exhaust and so disorder the nervous system. Is not the judicious apportionment of work, rest and amusement one of the most difficult and important problems of life with every man ? Below is given briefly Dr. Clarke's own statements in regard to amusements for the insane at Kingston : " Amusements are regarded as a very important part of the treatment, and in the winter months at least two nights in the week, and sometimes three, are devoted to the entertainment of the patients. Experience has taught us that we can supply a better class of amusements ourselves than outsiders can hope to do, and as a rule we do not encourage outsiders unless professionals to come here. Every Tuesday night we have what we call an ' At Home ' in the Amusement Hall. At this all sorts of games are played—cards, draughts, etc.,—and in addition a concert is given, selections by the band and orchestra, and songs by the employees and patients. Occasionally the patients themselves give excellent entertainments and supply the whole of the programme. At the " At Homes," coffee and cakes are supplied at the close of the concert, about 9 o'clock P.M. Friday night is devoted to dancing—7 to 9 o'clock P.M. All nurses and attendants must dance with patients

and square dances fill the programme. Patients, with one or two exceptions, are not permitted to dance with one another, and love scrapes are surprisingly few; nearly all see each other's infirmities and ridicule them. We have a flourishing minstrel troupe, a large brass band of 22 or 23 pieces, and a large orchestra. A musical nurse devotes her time to the amusement of the patients, drilling the calisthenic class, reading in the wards, etc. In the summer, one or two afternoons are devoted to baseball, one afternoon being given up to the patients alone to indulge in this popular sport and also croquet. Generally a steam yacht is supplied for the patients. There are weekly band concerts on the grounds, with occasional pic-nics, etc."

I had the gratification of hearing the brass band play very fair music, every musician being a patient. A large proportion of the inmates of the asylum, both male and female, were moving about on the green sward under the shade of the trees, and there were very few indeed that did not seem to be more or less under the influence of this soothing, yet healthfully stimulating mode of treatment. In a word, they seemed to be affected in the same way as I was myself.

I made special inqniries in regard to the treatment of sleeplessness, as it is plain that the nutrition of no organism can long remain natural without the influence of Nature's "sweet restorer." On this point Dr. Clarke summarizes as follows: "This is one of the difficult things to deal with. If possible we do without hypnotics,—use sulphonal, hyoscyamine, hot milk at bed-time, hot whiskey, and hot baths. Hypnotics are never employed continually; if good effects do not show at once, they are stopped. We depend more on the "gospel of fatness" than anything else. Warm baths continued for half an hour or more sometimes give wonderfully good results, as well as hyoscyamine, hyoscine and sulphonal."

In the entire management of an asylum for the insane under such advanced methods as those indicated in this paper, manifestly a great deal must depend on the individuality of the head of the institution; and I have no doubt myself that much of the success of Kingston asylum is attributable to the fact that the

present superintendent is a man of wide culture and many accomplishments. Apart from being abreast of the times in medicine, it is no small advantage that the superintendent is a good athlete, handy with tools, an accomplished musician able to lead the asylum orchestra, and endowed with a literary and histrionic ability that fits him to be the director of those forms of stage entertainment which are found most effective in the treatment of the insane ; and last, but not least, one who believes that human beings, even those whose mental balance is disturbed, are bettered by being kindly treated and *trusted.* I think it is one of the highest sources of gratification to any man to feel that he is regarded with an almost affectionate esteem by hundreds of unfortunates.

PELVIC ABSCESS.

By Dr. M. A. McFarlane, Ashton, Ont.

(*Read before the Bathurst and Rideau Medical Association, July.* 1890.)

In bringing this subject before your observation to-day, I do so only with the hope of directing your attention to the profound obscurity that may surround this condition in some cases, and yet how disastrous and fatal may be its consequences to the patient if not early diagnosed and radically relieved before the systemic forces become overpowered, as they were in this case whose history I will now briefly relate.

April 2nd, 1889.—I was first called to see this patient, a pale, delicate lady, of small stature, extremely feeble, very much emaciated, and presenting all the general characteristics of a long and habitual sufferer. Her complaints at this time were as follows: general weakness and lassitude, headache, anorexia, thirst, nausea and vomiting with annoying gaseous eructations, constipation, pain during menstruation, which was regular but scanty, constant heavy pain in the back, down the left thigh, and pointedly in the same hip and knee joints, stiffness and inability to straighten or walk upon the same leg, afternoon chilliness, with fever and night sweating. Family history exceedingly good. Married, with a family of four ; no miscarriages. Never

had any serious illness, and enjoyed excellent health until six months ago—three months after the birth of her last child,—when, from exposure at her brother's funeral (killed by C.P.R. accident), she was taken ill with chills, followed by what was regarded as "inflammation of the bowels"; from this she partially, but never fully, recovered.

When I first saw her I found her condition about as follows: skin dry and harsh; eyes dull and heavy; expression careworn and anxious, with lines drawn about the mouth; tongue slightly covered with grayish fur, but red and firey at the tip and edges; temperature 101.5°; pulse 110, small and hurried; considerable anæmia, with blowing bruit in the vessels of the neck; heart, lungs and kidney normal; liver and bowels sluggish, with great irritability of the stomach and restlessness at night.

Vaginal examination revealed considerable heat, very little discharge, and no odor. To the left, behind, and advancing somewhat in front, the womb was surrounded and firmly fixed by a mass of induration, hard and unyielding, which could be distinguished externally in the region of Poupart's ligament. The womb was crowded down, forward, and to the right, with shortening and flattening of the fornix; otherwise, the vagina, cervix and uterus were apparently healthy. The same mass could be detected per rectum, but it of itself was not involved. The left thigh was somewhat flexed and adducted, and could not be extended on the pelvis. Walking across the floor, the left leg dragged perceptibly, while the patient stepped upon the toe with considerable discomfort.

My diagnosis was now dimly centred round a pelvic cellulitis, which, if not actually suppurating, was at least accompanied with many septic symptoms. My treatment therefore I directed toward the following points: (1) Rest in bed. (2) Increased nutrition; this I endeavored to attain by first allaying the stomach irritability. I gave sodii bicarb. with dilute hydrocyanic acid simply before meals, with ʒi doses of glycerine after meals; broths, beef-tea, ext. malt, etc. (3) Intercepting the septic symptoms; for this I administered quinine and dilute sulph. acid after meals, keeping the bowels and kidneys gently active.

(4) The promotion of absorption, hot douche twice daily for 20 to 30 minutes, pot. iod. t.i.d., blistering externally over the mass, and internal applications of iodine to the cervix and vagina, followed by glycerine tamponade.

I will now give brief notes taken from my case-book.

April 9th.—Stopped applications to-day, as considerable inflammatory action and evidently increasing it. Great heat in the vagina. Patient actually worse. Temperature 102$\frac{2}{5}$°; pulse 120. Stomach symptoms somewhat improved.

April 17th.—Tried applications again to-day. Temperature 101°; pulse 104. Still chilly and feverish in the afternoons.

April 28th.—Stopped applications again to-day. Temperature 102.5°; pulse 118. Great heat and throbbing in the vagina. Marked afternoon chills with rising temperature, followed by increasing night sweating.

No bogginess can be detected. More convinced of my diagnosis. Communicated my apprehensions and advised removal to the hospital for operation. As a result of this disclosure, Dr. Wilson of Richmond was called in consultation. After a careful examination we were unable to locate signs of abscess, and the doctor advised me to continue on as I was doing.

May 9th.—Continued the applications to-day. Temperature 101$\frac{1}{2}$°; pulse 120. Sweats and chills still continue. Gave atropine sulph. $\frac{1}{120}$ gr., increasing to $\frac{1}{60}$ gr.

May 15th.—Sweats checked, as under the physiological effects of atropine. Chills not so annoying. Eats better and stomach not so troublesome.

May 31st.—Have continued the applications internally, with iodine externally. Considerably improved. Quit the soda and hydrocyanic acid, as stomach quite settled. Chills and sweats arrested. Feeling generally better. Temperature 100$\frac{2}{5}$°; pulse 115. Has not menstruated since April.

June 11th.—Continues to improve; stomach settled. Tired of malt, changed for beef peptonoids.

July 1st.—Improving slowly; temperature 99.5°; pulse still rapid and small (115).

July 15th.—Not much change; becoming tired of treatment.

Allowed to sit up for a while during the afternoons. Some bronchial irritation, recommended Scott's emulsion.

Aug. 1*st.*—Considerably stronger and better. Temperature 99° ; pulse 112. Very anæmic. Gave sacc. carb. iron 12 gr. doses after meals. Left applications to nurse. No return of menstruation.

Aug. 15*th.*—Looks remarkably better. Color vastly improved. Has gained four pounds in flesh and feels stronger. Temperature almost normal ; pulse 104. Continued the iron.

Aug. 23*rd.*—Attacked with diarrhœa. Does not look so well. Complains of pain in the back. Quit the iron.

Sept. 17*th.*—Again attacked with diarrhœa. Has lost very much of the color she had regained. Pain in the hip and thigh again very troublesome. Temperature 101½° ; pulse 123.

Oct. 4*th.*—Find the old trouble gradually returning in all its phases. Stomach and bowels very irritable. Inclined to attacks of diarrhœa.

Oct. 15*th.*—Diarrhœa and chills, with evening rise of temperature ; pulse 136. Failing in every sense.

Oct. 24*th.*—Dr. H. P. Wright of Ottawa called in consultation. The mass was found still firm and unyielding, the womb firmly fixed, but no bogginess or other positive signs of abscess detected. The uterine sound was passed, and other than slight hyperæmia, the womb was pronounced healthy. On examination per rectum, the mass could be felt, but the bowel itself was certainly not involved. After a careful and thorough examination, we found ourselves without any really convincing diagnostic signs of abscess, and the diagnosis remained open between malignant disease and a chronic pelvic suppurative cellulitis.

Oct. 30*th.*—Gluteal region swollen, red, and œdematous. Gaseous crepitation and bogginess can be detected beneath the finger. I administered stimulants and opened the abscess without the aid of an anæsthetic. From one to two ounces of abominably fætid pus and a small quantity of gas escaped along with large sloughs of cellular tissue, which I drew out by the aid of the dressing forceps. I passed a probe deep into the cavity by the great sciatic notch, and introduced a large drainage tube,

"*Cattle die,*

Kinsmen die,
One's self dies too;
But the Fame never dies
Of him who has won
A Good Name."
—*Old Norse Saga*

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about 4½ inches long, which entered without much difficulty, and syringed out with weak carbolic solution. I dressed the wound with iodoform gauze and dust. This I repeated daily, cleansing the tube. Ordered stimulants, beef tea, etc.

Oct. 31*st.*—Temperature 101° ; pulse 120. Some vomiting last night.

Nov. 1*st.*—Opened another œdematous and crepitating spot just in front of the trochanter. Some pus and gas escaped. Drained by small tube.

Nov. 3*rd.*—Made another small incision below the wing of the ileum and drained ; pus escaped. Pulse very weak and rapid (133) ; temperature 101⅖°. Some vomiting. Made vaginal examination. Mass somewhat softened and apparently less fullness. Wounds becoming cleaner and odor almost gone, but no indications of healing.

Nov. 6*th.*—Has kept on much the same. Decidedly less pain along the course of the nerves. Complains now mostly of a burning sensation within the pelvis and in the region of the wounds. Some œdema of the left leg and vulva. Temperature ranging from 101° to 102°, pulse from 124 to 130 and very weak.

Nov. 9*th.*—Found my patient in a semi-comatose condition, tossing restlessly, and moaning heavily.

Nov 12*th.*—Died in an unconscious state.

A remarkable feature of the case, it seemed to me, was the complete lack of vital energy within the tissues. The wounds, though sweet and clean, and not discharging excessively, yet showed not the slightest signs of granulations, the edges remaining as clean cut as the day on which they were opened.

On proceeding to a discussion, permit me, once more, to direct your attention to the marked obscurity of this case, the more particularly so, when we consider that, just six days previous to the manifestations of pointing, Dr. Wright and myself were unable to detect anything absolutely indicative of the condition present. However, notwithstanding the extreme difficulty of diagnosis, we find ourselves standing face to face with the fact that abscess developed within the pelvis, pointed in the gluteal

region, and was opened. That it did not burrow its way around and between obstructing bones and muscles from the depth to which my probe was passed in six days I think may be admitted, and, therefore, must have been present at the time of our examination. This I base on consideration of the extreme difficulty with which pus usually makes its escape from this region.

The question then arises as to the nature, cause and course of this abscess, and here, unfortunately, we are thrown, partially at least, upon the field of conjecture—a post-mortem having been refused. In any case, it was certainly retro-peritoneal, and probably bound down beneath the deeper pelvic fascias, thus increasing the difficulties of diagnosis. I think, however, it may be fairly discussed under three heads—

I. Psoas abscess,—so called in connection with spinal or sacral joint disease.

II. Fœcal abscess.

III. Abscess the result of a breaking down primary inflammatory exudation—a pelvic cellulitis.

I. In reference to psoas abscess, I have seen the same flexion and adduction of, and inability to extend, the thigh, the pain, the tumor, etc., but accompanied by its apparent cause, which I may briefly say in this case was positively eliminated. Again, the constitutional symptoms are generally much less marked. Pus following along the sheath and embedded beneath the psoas muscle, from whatever cause, will manifestly explain the concurrence of these symptoms. I might mention that morbis coxi was simulated in many respects, but need not be further considered.

II. In reference to fœcal abscess, we have to speak more cautiously, but still, I think, with some degree of certainty. To determine this, however, it is necessary to have definite ideas of the original cause, because fæcal abscess must in every case be secondary to some other pathological condition. If, then, it were fæcal abscess, it must of necessity be due either to ulceration or laceration of the bowel, with escape of fæcal matters into the surrounding tissues. Let us look, then, for the indications of these. But in doing so we must not loose sight of this mass

of indurations existing for months. With this in view, fæcal abscess can only be thought of under three circumstances—

(*a*) Ulceration of the bowel from some previous trouble with escape of fæcal matter, setting up chronic abscess surrounded by this mass.

(*b*) Malignant disease, producing laceration of the bowel, etc.

(*c*) Abscess breaking through the bowel and ultimately becoming fæcal in character.

(*a*) The first condition would have been preceded by symptoms of ulceration, which it was not, the patient being in good health until seized with inflammation. Again, speaking roughly, as we must do for brevity, the most frequent seat of ulceration is the cæcum or appendix. We find the mass on the opposite side. Not conclusive, of course, but space prohibits fuller discussion.

(*b*) As to malignancy, we found the mass not invading the uterus, vagina or bowel. Yet the abscess was certainly within the true pelvis, and I cannot conceive of the bowel being involved to such an extent as to produce laceration in this region and yet not be detected by the examining finger.

(*c*) The last condition is possible, but as not affecting materially the points under discussion, need scarcely be referred to. Still, I am not inclined to think that such was the case, for the reason that pus was never observed to have been discharged by the bowel, that I could not discover any purely fæcal matter in the discharge from the wounds, that within a few days they lost their fæcal odor, and that we know abscesses in the region of the bowels take on this feculant odor, accompanied, possibly, with an accumulation of gases within its cavity.

III. Finally, we have to consider pelvic abscess, the result of a breaking down cellulitis. This, I am inclined to think, was the condition of this patient, for the following reasons : A previous history of a pelvic inflammation resulting from exposure, the origin of all her troubles. I mark this point as of considerable importance. Again, the prolonged course of septic symptoms. Such septic symptoms must be due to septic absorption, such septic absorption must have a focus, such focus must in all

probability be at the seat of affection, which was certainly within the pelvic cavity. Again, the lull in the onward and downward course of the disease, a fact which, probably, we would hardly expect in a fatal and progressive disease like cancer and her allies ; and, finally, the lack of invasion of the uterus, bowel and vagina, the abating of the pain along the nerves pressed upon, the partial fall of temperature, the subsidence of chills, and the softening of the mass after the escape of its contents.

That abscess may arise from the breaking down of a mass of inflammatory exudation within the pelvis ; that it may remain pent-up or burrowing for months or even years ; that it may be present as a mass, firm and unyielding, being bound down by the deeper fascias ; that this condition will be accompanied by chills, fever, sweating, etc., and pain along the course of the nerves involved or pressed upon ; that it will, in time, almost of a certainty, burrow in some direction until it finds an exit ; that there may be gaseous crepitation beneath the tissues at the region where pointing takes place ; that the discharge may at first be extremely fœtid ; and, finally, that early diagnosis is extremely difficult and uncertain, are all conditions which we know may accompany retroperitoneal abscess within the pelvic cellular tissues whose primary origin may have been simply an inflammatory action therein.

Granting, then, that it was originally retroperitoneal abscess, or, even admitting there is still room for doubt, I would ask the question—under the existing chain of symptoms during the month of April—would it not have been justifiable and even expedient to have made an exploratory incision when we consider the great risk of earlier rupture into the peritoneum, and the almost inevitable result if left alone to burrow far and wide in search of exit which, it seems to me, should be furnished it before the system becomes shattered and the vital activity utterly overpowered, as it was in this case. Our profession is to assist Nature. Nature here is struggling to relieve herself of a foreign substance, a source of extreme erethism to her very existence, and I cannot see our duty clearer than in cases of this kind. In a few moments with the knife we may accomplish what will

take months of suffering and agony on her part to achieve, and even then, unfortunately, most imperfectly, so much so, that widespread sinuses and profuse suppuration generally removes the patient by hectic and exhaustion. In my brief experience I have seen four such cases. Three were left to Nature's guiding hand—three died, riddled with sinuses and pitted with abscesses. The fourth was my own cousin, whom I saw with Dr. McKinley of Bristol. It was originally a fœcal abscess, probably from ulceration of the cæcum or appendix, intraperitoneal, bounded below by peritoneum which could be detected per rectum bulging down, firm and tense, above by matted and coiled intestines. It was tapped, but immediately refilled, and we had him removed to the Montreal General Hospital, where Dr. Bell, after aspirating three times without finding pus, still, under the advice of the hospital staff, proceeded to perform an exploratory laparotomy, and succeeded in evacuating a large quantity of fœtid pus with a complete and satisfactory recovery. Pardon me if I venture to express it as my opinion, that if this case, too, had been left to Nature, I would to-day have been serving you up a full bill. Further, I would say that it seems to me more the principles of quackery than the instincts of an honorable member of an honorable profession to stand by, with folded arms, professing to be doing our utmost for the patient before us, while we, possibly, inwardly and conscientiously conceive him to be drifting onward, slowly but almost certainly, to a fatal, agonizing, and most loathsome termination ; while, on the other hand, in risking operative interference, we risk little more (probably less, when we consider the possibility of peritoneal complications) than what Nature will of herself, in time, most stubbornly perform, even at the cost of the teetotal disorganization of the very seat and structure of her habitation ; and, when again, manifestly there will be this gain—the preservation of a vast amount of extraordinary vital forces consumed in months of constitutional struggle wherein the powers of recuperation are being daily sapped to their very sources. These months of suffering and misery must not be overlooked.

In conclusion, I would like to notice one feature in the line

of treatment pursued, viz., the administration of iron. You will have noticed the pleasing effects of this drug at first. I am inclined to think it was a two-edged tool, and I must say I was wary in its use. In it I conceive a remedy which, while improving the condition of anæmia, was at the same time fanning into renewed activity the smouldering process of suppuration. Looking on the pathology of such a case for a moment, I think I may make my reasons clear. First, injury to the tissues from exposure or otherwise, a flushing of blood to repair damages, an abundant oozing of its cellular and plasmic constituents, excess of this, death of a portion of the involved tissue from altered nutritive relations or possibly strangulation of circulatory supply from the very pressure of excessive exudation into its meshes. At this stage comes into force another great law of Nature, viz., that any portion of the system, being deprived of its vitality, at once becomes a foreign body, a source of irritation, and Nature immediately proceeds to remove it. This she attempts first by the ordinary means, viz., *absorption* and *elimination*. This is fully manifested by all the excretory organs—sweats, diarrhœas, disorders of kidneys, etc. Failing in this, however, she brings into force what I may be allowed to call simply an *extraordinary process of elimination*, viz., *suppuration;* the cells proliferate at the expense of tissue, these soften, burrowing proceeds in the line of least resistance, until exit is made and the irritant removed. But let us notice that in all inflammations there is a stage when the excessive exudation may become absorbed and natural recovery occur, (the liver may become encysted); further, that, even after pus formation has commenced, this is still possible, though, we must admit, extremely rare. Look, now, at the action of iron in such a case. Suppuration has occurred, but inflammatory action has become chronic, vitality is lowered, anæmia is present, circulation ebbs feebly, metabolism is torpid, absorption holds its own, and what I have called *natural recovery* —that is, recovery without further injury to or loss of substance —seems still possible. At this critical time iron is administered. What follows? The blood thickens, the heart and vessels are stimulated by a more solid and inervating fluid, circulation is

invigorated throughout the entire system, oxygenation is increased, metabolism is aroused. These crippled and degenerative tissues, from lying amid tissues in a state of nutritive torpidity, are now surrounded by nutritive activity. Corresponding activity is prohibited. The more vividly, then, are they present as a source of irritation, and the more energetically does Nature proceed to regain or to remove them. Vascular excitement is again established, exudation and proliferation are renewed in excess of nutritive requirements, excess accumulates, the absorptive powers are strained to their utmost (as marked in this case by the attacks of diarrhœa, etc.), but without success, and suppuration is again in process. That there are other forces upon which iron exerts some peculiar subtle influence I believe. Trousseau tells us that it frequently hastens disintegration of tissue in tubercular deposits, yet these are distinctly non-vascular growths. He does not tell us why. This matter is worthy of consideration, more particularly so in female pelvic troubles, where we know iron is such a pronounced vascular excitant of the viscera in that region.

N.B.—Since reading the above paper, I have had occasion—assisted by Dr. Preston of Carleton Place—to operate on a female child, 9 years of age, suffering from suppurative typhlitis. As soon as septic symptoms manifested themselves, I explored with the needle and obtained pus. I immediately decided upon operation, and, although performed nine miles from home, and under circumstances of poverty and uncleanliness that almost prohibited it, I am pleased to say, with a speedy and most satisfactory recovery.

GRANULAR CONJUNCTIVITIS.*

By F. Buller, M. D.,
Professor of Ophthalmology and Otology, McGill University; Ophthalmic and Aural Surgeon to the Montreal General Hospital.

The term "granular conjunctivitis" has been applied to several morbid conditions of the conjunctiva which differ very materially in their clinical features, not only in regard to the appearances presented by the conjunctiva, but especially in the greater or less tendency to develop pathological changes in adjacent structures. Besides the changes which take place in the structure of the conjunctiva itself, most important alterations are, in a certain class of cases, apt to be met with in the substance of the eyelids and in the cornea.

Of the former, shrinking and distortion of the eyelids, with consequent alteration in the position and appearance of the eyelashes, are the most conspicuous to the observer and the most troublesome to the unfortunate subject of such changes. They may, indeed, be the chief factor in the production of corneal disease which so often complicates the form of granular conjunctivitis which I propose to deal with in this paper. Were it not for corneal complications the disease in question would remain a comparatively harmless affair.

In practice, we frequently meet with granular conjunctivitis in which there is little or no tendency to corneal complications, even where the disease has lasted for months or years. In such cases there is apt to be considerable swelling of the conjunctiva, which is, in addition, decidedly moist and succulent; in other instances the palpebral conjunctiva, especially that of the upper lids, appears thick and voluminous, and beset with florid or pale, smooth, hard-rounded prominences—fibrous granulations. We may as well pass by all these, as well as all acute primary cases of granular or blenorrhœic conjunctivitis, and take into consideration only that class of cases which are known to be especially rebellious to treatment and dangerous to the integrity of the organ affected.

The important feature we have to deal with, then, is the ten-

* Read before the Medico-Chirurgical Society of Montreal.

dency to implication of the cornea, the upper part of which, as a rule, is the first to be affected, and hence presents in varying degree infiltrations, erosions, and the development of blood-vessels, these changes gradually descending lower and lower, that portion habitually covered by the upper eyelid often becoming densely clouded and vascular; sometimes the entire cornea becomes more or less hazy and vascular. This vascularity, known as pannus, may therefore be partial or complete. In severe, neglected or badly treated cases the cornea may ulcerate and perforate, giving rise to prolapse of iris and other still more disastrous complications. Extensive ulcerations or infiltrations of the cornea are also apt to be attended with iritis, with severe pain and intense irritation. In this class of cases, the characteristic feature is the liability to attacks of acute inflammation. During such attacks the patient's suffering will be extreme, and with the severe pain there is intense photophobia and lachrymation. These are the cases which now-a-days ultimately fall into the hands of specialists, but, unfortunately, they too often only come when the exhausted resources of unskilled advisers have left the eye badly maimed or hopelessly wrecked. Most of them come with a forlorn history of suffering and sorrow, prolonged over many years, the greater part of which might have been avoided by skilled and careful treatment. It is, however, but just to say that some, a small percentage I believe, will go wrong despite all that even the most experienced ophthalmologist can do to help them.

It is just this class of bad cases which forms the great bulk of granular lids as we see them in hospital practice, and from their persistence they seem to exist in relatively greater numbers than is actually true. I know of one such who was a faithful attendant at the Montreal General Hospital for ten years or more, and has finally made a satisfactory recovery.

For centuries it has been the ambition of every ophthalmic surgeon to find some speedy and certain means of relieving this opprobrium to our art. How have they succeeded? Fifty years ago McKenzie, then and for years later undoubtedly the greatest ophthalmic surgeon of the time, gives but a meagre

account of the treatment of this disease. For granular conjunctiva he recommends scarification, lunar caustic, sulphate of copper, strong lunar caustic salve, red precipitate salve, vinum opii, and the expressed juice of the *holcus avenaceous*. These, he says, assist in clearing the cornea, as well as repressing the trachoma of the conjunctiva. Besides these things, he blistered the nape of the neck and gave tonic medicines, especially sulphate of quinine, and in some instances he removed exuberant granulation masses with the knife. Later ophthalmic surgeons often practised syndectomy or removal of a conjunctival and subconjunctival strip all around the cornea, an operation which is still frequently practised with more or less benefit when there is pannus. The latter condition was also found to be curable by inoculating with the pus from ophthalmia neonatorum, both granulation and pannus disappearing like magic (in favorable cases), with the vast inflammatory effusion which attends the acute blenorrhœa thus excited. The results were sometimes brilliant; disaster was not uncommon. Fortunately the same result is now frequently attainable in a more peaceful way.

The discovery of Sattler, in 1881, that in trachoma or true conjunctival granulations certain characteristic bacteria are present, gave a new impetus to the search for more efficient remedies in this disease.

The trachoma coccus is found in the tissue of the conjunctival follicle or granulation. Morphologically, it is " a diplococcus of the shape of a double roll, and distinguished by its minuteness and the slight development of a dividing line. It stains with all basic aniline colors and possesses no individual movement, though, on the other hand, a rotary and oscillating movement can be demonstrated. Inoculation with particles of pure culture, by puncturing the human conjunctiva, produces typical trachoma."

This discovery has led to the more systematic use of so-called germicides in the treatment of granular ophthalmia, and apparently with favorable results.

There are, of course, many remedial agents which may be employed on account of their supposed germicidal properties. Foremost among these stands corrosive sublimate, a drug which

has had an established reputation in the treatment of conjunctival inflammations long before the germ theory was known. The same may be said of the red oxide of mercury ointment, which probably owes its curative properties to the transformation which it undergoes in the conjunctival sac into corrosive sublimate or some other active salt of mercury.

Solutions of corrosive sublimate has been used in varying strength, from 1–120 to 1–10,000. In using the strong solutions, cocaine has been employed to allay undue irritation. Personally I have never used stronger solutions than 1–1000, and have found considerable benefit from the free use of weaker solutions, as 1–3000 to 1–5000, several times daily. Carbolic acid in solution, or applied pure to the everted lids once daily, is often extremely efficacious; none of the pure acid, however, should be allowed to come in contact with the ocular conjunctiva. This may be avoided quite readily by making the application carefully to the everted lids and washing off with water before they are replaced.

Resorcin I have used in the same way with advantage, but, as far as my experience goes in this direction, it is inferior to pure carbolic acid.

Boric acid in fine powder, rubbed thoroughly into the palpebral conjunctiva, has been strongly advocated by some ophthalmic surgeons, but I have failed to satisfy myself that it is a desirable remedy used in this way.

Recently pyoctanin has been much praised. Certainly its unirritating qualities are a point in its favor, if the vaunted germicidal properties should turn out what they are claimed to be.

But the two remedies I have had most satisfaction from in the last few years are jequirity, and the operation of squeezing out the granulations. The former plan of treatment is only applicable in a certain class of cases, such as were formerly deemed suitable for treatment by inoculation. That is, old, inveterate cases with considerable corneal vascularity and rather firm trachomatous infiltrations, the conjunctiva being rather the reverse of moist and succulent.

The large and numerous round, or flattened and smooth,

fibrous granulations already alluded to are not amenable to the jequirity treatment. In favorable cases, one or two applications of a four per cent. solution of jequirity freshly prepared sets up a pretty active croupous conjunctivitis, which often becomes distinctly purulent in character, and the subsidence of this in a few days is followed by a rapid and often complete recovery. We must, however, be prepared to meet with disappointment in some instances, the granulations and pannus failing to disappear where the indications seemed clear for the use of this drug, and the reaction it caused quite after the normal type. I have only twice seen it cause troublesome ulceration of the cornea, and occasionally a dacryocystitis.

The operation of pressing out granulations is best done with Prince's ring forceps. The larger and more pulpy and gelatinous-looking the granulations are, the more thoroughly they can be eradicated in this way. Immediately after the operation the conjunctiva should be freely washed with a pretty strong solution of perchloride of mercury, and a weaker solution used several times daily until the abraded conjunctivitis heals. The results of this treatment are, as a rule, exceedingly satisfactory.

I do not mean to imply that the old standard remedies for granular ophthalmia are to be supplanted by the more recent ones, for they still play an important part in the treatment of more recent cases, and, in fact, the judicious use of nitrate of silver, copper sulphate, alum, oxide of mercury, tannic acid, and some other remedies will generally suffice to cure ordinary recent cases, and it is only when too zealously and persistently employed that they are likely to prove hurtful. This is, perhaps, especially true of the silver and copper preparations, which should never be persevered with in the face of an augmenting irritation.

The true secret of success in the treatment of this disease in any of its forms lies in a careful observation of details, both local and general, and a nice adaptation of the remedy to the requirements of each case, rather than any attempt at routine practice.

24	25	26	2	15	17	20	26			
m e	m e	m e	m							
72	72	74	7							
1014	1022	1015			1019	1015	1012			
118	88	120		Trace	Trace	None	None			
59	44	60		36½	40	40½	32			
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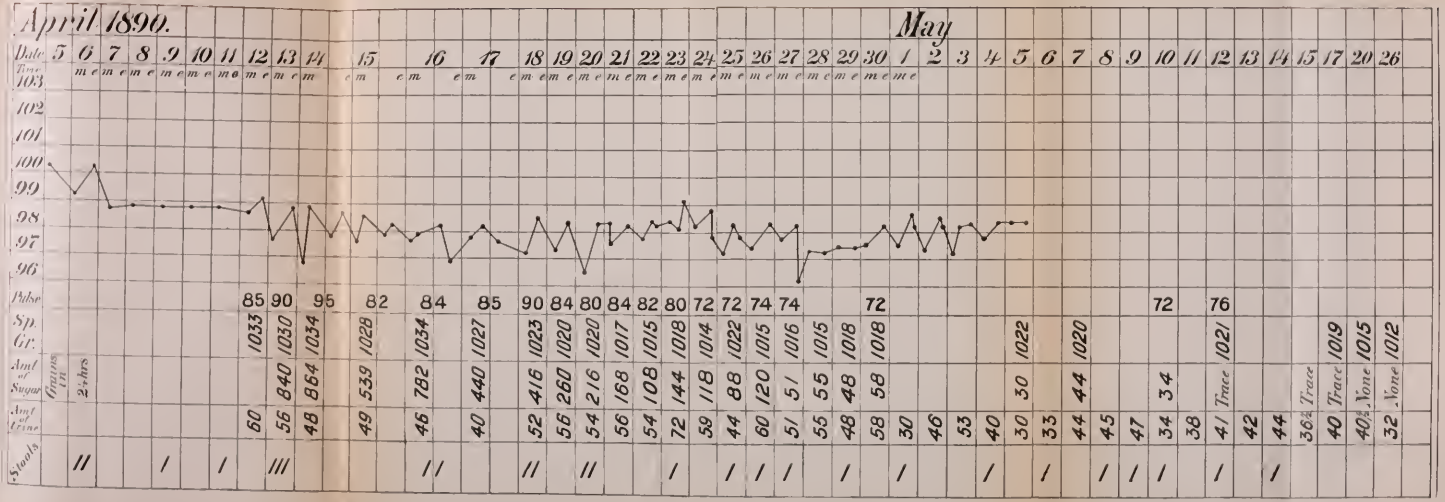
April 1890.
May
Date
Time
Pulse
Sp. Gr.
Amt of Sugar
Amt of Urine
Casts
Grms
2-hrs
5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 17 20 26
103
102
101
100
99
98
97
96
85 90 95 82 84 85 90 84 80 84 82 80 72 72 74 74 72 72 76
1033 1030 1034 1028 1034 1027 1023 1020 1020 1017 1015 1018 1014 1022 1015 1016 1015 1018 1018 1022 1020 1021
60 56 48 49 46 40 52 56 54 56 54 72 59 44 60 51 55 48 58 30 46 53 40 30 33 44 45 47 34 38 41 42 44 36½ 40 40½ 32
840 864 539 782 440 416 260 216 168 108 144 118 88 120 51 55 48 58 30 44 34 Trace Trace None None
1033 1030 1034 1028 1034 1027 1023 1020 1020 1017 1015 1018 1014 1022 1015 1016 1015 1018 1018 1022 1020 1021 Trace 1019 1015 1012
2-hrs
II I I III II II II I I I

CASE OF GLYCOSURIA—RECOVERY.*

By J. H. B. Allen, M.D., Montreal.

Miss E. C., aged 62. Was called in to see patient April 5th, 1890, who had been suffering during the past three days from vomiting. Was told she fasted on the 3rd and took a seidlitz powder, which gave her some relief. She is a stout, flabby, slightly anæmic old lady. Has a dry, harsh skin; pulse regular and full; temperature 100° in mouth; tongue dense white fur; bowels confined; suffering from incessant vomiting, ejecting clear, bilious fluid with great difficulty; no trace of blood found. Experiences an uneasy feeling about head, but no actual pain; free elimination of urine; no chemosis; œdema over both tibiæ; slight hyperæsthesia of lower extremities. Has perfect use of limbs and can sit up. No albumen found in urine. Slight tenderness on pressure complained of in epigastrium, which could be traced round to the spine on either side. No deformity or special tenderness of the spine detected. Chest and abdominal organs are apparently normal on physical emamination. In August, 1889, she had a large bullæ on ring finger, followed by several others round the original, attended with great pain. She has always been what one would call a neurotic individual. Her appetite has been noticed to be excessive for some time, although leading an inactive life.

April 6th, 1890.—Vomiting was greatly relieved by sinapism to epigastrium; small amounts of milk and soda water followed by calomel and soda operated freely. Still slight œdema in legs; temperature 100° in mouth; thirsty.

April 8th.—No vomiting since the 6th, or œdema since the 7th. General hyperæsthesia, which causes her to call out when limbs are at all roughly handled; can stand erect without assistance, but on attempting to sit down, falls heavily into the chair.

April 10th.—Dr. Roddick saw case in consultation to-day. Friends say she lies in bed like a log, muttering, and will not speak to them, but when I called, had no difficulty in eliciting answers to questions.

* Read before the Medico-Chirurgical Society of Montreal.

April 13*th.*—Vomited once during the night. Sibilent râles noted over back and front of chest. Morning temperature, 98.3°; evening, 99°. Pulse 85, regular and somewhat soft. Great pain localized over lower dorsal region; hyperæsthesia tends to move. Had an attack this morning, throwing up limbs, arching back, speechless, looking intently at friends—all being over in a minute. Uric acid crystals, no albumen. Jaksch's Phenyl Hydracin test failed yesterday and to-day; Fehlings revealed presence of sugar. Has been taking Tr. Nucis Vom. ♏x; Potassium Bromid. gr. x, t.i.d.

April 14*th.*—Pruritus of vulva noticed first yesterday; was drowsy; no inclination to take food; pain most marked down right side of abdomen. Towards evening on the 13th experienced a tight feeling and spasm about neck, speechless, slightly curved spine, all passing off in a very short time, less thirst, chest clearer, and uses limbs better. Gluten bread (made by E. Conor of Paris) ordered, with chicken, beef-tea, etc., no starch or sugar being allowed.

April 17*th.*—Hyperæsthesia less; limbs can be rubbed roughly and tibia percussed without eliciting pain; fingers and toes feel as if a tight glove were drawn over them; restless, sleepless, and excessive pain complained of in frontal bone; sugar diminishing. Was seen in consultation with Dr. Ross, after which it was decided to give codeia ¼ grain t.i.d. and watch result.

April 25*th.*—Slept well the last eight nights; skin acting freely, starting at ankles and wrists, while face, shoulders and neck were covered with sudaminæ for several days. Pains greatly relieved, but still persist in right shoulder, which has been very troublesome during the entire attack.

May 20*th.*—Has been up about house for the last three weeks, and only a trace of sugar was found on the 12th and 15th with Fehlings test.

July 30*th.*—Examined urine every two days, no trace of sugar being detected; no pain; still tight feeling in fingers and toes. Appetite poor; only takes coffee at meals, no liquids between. Iron tonic ordered, and codeia reduced to three days per week.

Aug. 30th.—On the 20th, after worrying, a very slight trace of sugar was noted for a few days, which passed off, codeia being given daily.

Dec. 30th.—No sugar has been found since August, urine being examined every two weeks. Diet has been extended the last three months, several kinds of fruit and vegetables being allowed; no wheat bread.

The temperature in this case is very interesting, always taken in mouth, being elevated at times during the first week, subsequently subnormal for some time, frequently being $96\frac{4}{5}°$. Fagge mentions cases where elevated or subnormal temperatures were noted, but I see none where a combination was noticed in the same case. He looks upon subnormal temperatures with nervous phenomena as very unfavorable for prognosis. Nervous phenomena were very marked in this case, judging from the amount of hyperæsthesia, weakness in limbs, and two slight convulsive attacks. Fagge also speaks of pain in right shoulder being frequently noted in hepatic disorders, and, if you remember, I stated that patient suffered constantly from pain in right shoulder long after pains in other parts were entirely relieved. Gastric disturbance, rapid loss of power, drowsiness, nervous phenomena were, I think, the starting point for coma. Regarding sugar, it is worthy of note that it was not reduced very materially until after codeia was given, after which, in twenty-four hours, we had the skin acting freely and sleep restored, general improvement of all symptoms setting in soon after.

Correspondence.

LETTER FROM BERLIN.

Berlin, April 4th, 1891.

To the Editors of The Montreal Medical Journal.

I enclose you a programme of the Twentieth Congress of the German Surgical Association, which has just concluded its labors here. The congress was formally opened in the aula of the University on Wednesday, the 1st of April, at 12 o'clock noon, by the President, Prof. Thiersch of Leipzig. The large hall was packed by an attentive and enthusiastic audience of, I should say, about five hundred surgeons. The interest was manifested throughout all the subsequent meetings without any abatement, and at the morning sittings, which were held in the Royal University Surgical Klinik (von Bergmann's), from 10 A.M. to 1 P.M., both the amphitheatre and the floor of the klinik were filled, so that standing room could hardly be obtained by those who came a few minutes late. The programme, as will be observed, was arranged so that patients and preparations (of which there were a great number) were presented at the morning meetings in the klinik. Noticeable features of the meetings were: The practical nature of the papers, which were usually short, and in most cases accompanied by demonstrations of patients or preparations (in many cases brought from a considerable distance); the character of the discussions, which were short and to the point; the regular and steady attendance of the older members, as well as the amount of work shown by the younger ones; and the punctuality with which the meetings were opened and brought to a close. As was naturally expected, the use of *tuberculin* (as it is called here) came in for a good deal of discussion, a special discussion having been arranged for at the first meeting. I shall not attempt to give any details of this discussion, which was opened by von Bergmann, as you will already have had telegraphic reports, and in due time the proceedings will be published in full. At the first morning meeting in the klinik several cases (four or five) of lupus of long stand-

ing which had recovered under the tuberculin treatment were shown. Prof. Hahn presented one case and Dr. Sonnenburg two cases of phthisis which had been treated with tuberulin, and in which pulmonary cavities had been opened. In two of these cases the cavities were still open and plugged with iodoform gauze. Prof. Liebreich was also present and addressed the meeting, presenting the claims of his new anti-tubercular remedy, but did not seem to make much impression upon his hearers.

As usual, the morning demonstrations at the hospitals were among the most interesting features of the Congress. On Wednesday morning a large number of visitors were escorted through the surgical wards of the Charité by Prof. Bardeleben and Dr. Kohler. Several cases of surgical tuberculosis were shown which had been treated with tuberculin, but nearly all had been subsequently operated upon,—notably three or four cases of tubercular glands in the neck. A case of leprosy, which had been treated with tuberculin, was also shown, but did not seem to have been affected by the treatment. The patient was a German, 41 years of age, who had contracted the disease in Brazil, and who presented all the characteristic features of the malady. On Thursday morning Professor Hahn gave a similar demonstration at the Friedrickshain Hospital. This fine hospital, which is situated in the Friedrickshain park, contains an excellent surgical klinik and a most conveniently laid out and perfectly equipped operation building, completely isolated from the wards. Many most interesting cases were shown here also. On Friday morning Dr. Sonnenburg gave a demonstration at the Moabit Hospital, which was largely attended. Among other interesting cases shown here were several cases of temporary resection of portions of the skull for cortical epilepsy and similar cerebral conditions. The operation had been done (in each case) by making an elliptical incision and cutting through the bone, then chiselling through the bone at the base of this semi-ellipse, subcutaneously, and reflecting the piece of bone with skin and periosteum attached. After the brain had been explored, and in two cases cysts removed, this piece of bone was replaced, and healed under one dressing, leaving no evidence of operation

beyond the cicatrix in the soft parts. Many tubercular cases were also shown which had been treated by tuberculin, notably a pulmonary case in which a large cavity had been opened, and at the bottom of which the pulsation of some of the great vessels could be distinctly seen by reflected light. This hospital has also an excellently equipped operating room. On Saturday morning Dr. Rotter gave a demonstration at the St. Hedwig's Hospital. This is a Roman Catholic institution under the direction of the Sisters of Mercy. It contains a large number of surgical patients, and is also excellently equipped for operating. Many interesting cases were also shown here. On Friday morning Dr. Körti gave a demonstration at the Urban Hospital, and on Saturday morning Prof. Bardeleben gave a second demonstration at the Charité, but I was unable to attend them.

Altogether the meeting was calculated to impress the foreign visitor most favorably. The morning sessions lasted from 10 A.M. to 1 P.M., and the afternoon sessions from 2 to 4 P.M. The dinner was held in the Central Hotel at five o'clock P.M. on Thursday, April 2nd. J. B.

Reviews and Notices of Books.

Manual of Bacteriology. By EDGAR M. CROOKSHANK, M.B. Third edition; 8vo, pp. 460. London: H. K. Lewis. 1890.

The special feature of Professor Crookshank's book is that it comprises a description of the more important bacteria in addition to describing the methods employed in bacteriology. As far as we know, all other English text-books on this subject deal with methods alone. The present edition is substantially the same as the last, brought up to date. An appendix has been added, containing an account of actinomyces and the parasites of malaria. We notice that no attempt has been made to leave out a large number of details long since discarded in some laboratories. No mention is made either of such common and widely used articles as Petri's dishes for plate cultures and Esmarch's method of employing ordinary test-tubes for this pur-

pose. No directions are given for making anærobic cultures. In short, the technical part is not nearly so full and carefully prepared as the descriptive part. The paper is somewhat lighter than in the first edition, but the get-up of the work is excellent, and the colored plates, though diagrammatic, are clear and striking. The woodcuts are carefully made. As already said, the book is the only one giving a descriptive as well as technical part, which makes it indispensable to anyone obliged to confine his reading to English works on the subject.

A New Medical Dictionary: Including all the Words and Phrases used in Medicine, with their proper Pronunciation and Definitions. Based on Recent Medical Literature. By GEORGE M. GOULD, B.A., M.D., Ophthalmic Surgeon to the Philadelphia Hospital, etc. Philadelphia: P. Blakiston, Son & Co, 1012 Walnut street. Montreal: William Drysdale & Co. 1890.

Within the past year no less than four different medical dictionaries have been issued in America, all useful and creditable to their authors. We have the two great works of Foster and Billings respectively, reviews of which have appeared in this JOURNAL within the past few months. The third in size is that of Dr. Gould's. It includes the numerous words and phrases added to medicine during the past ten years, special attention being paid to accurate descriptions of the new words coined in connection with bacteriology, electro-therapeutics, pathology, and the various specialized branches of modern medicine and surgery. We have tested the work by looking for a number of the more recently coined words, and in every case with success. There is a very useful appendix on the mineral springs of the United States by Dr. Judson Daland of Philadelphia.

The Daughter: Her Health, Education, and Wedlock. Homely Suggestions for Mothers and Daughters. By WM. M. CAPP, M.D. Philadelphia and London: F. A. Davis, publisher. 1891.

It is a somewhat remarkable fact that in the plans for the

education of the young a knowledge of the constitution of our own bodies has till lately found no place; and even yet a man may pass through some college courses and receive what is termed a liberal education without acquiring any knowledge of the structure and functions of his own body. So absurd has been the education for girls that a young woman often found herself a wife, and perhaps a mother, without the slightest knowledge of the duties devolving upon her, and on the wise discharge of which the interests of the family so much depend. The present work does not pretend to give all that instruction which furnishes the young woman for her future. It does, however, give a great many useful hints on matters which have hitherto been too persistently ignored. The task Dr. Capp has undertaken has been performed with much discretion, which is the most difficult part in the whole. This book will probably do no harm and much good. It paves the way for something more elaborate and complete; and if it does no more than arouse mothers to a sense of their duty to their children, especially their daughters, it will accomplish a good purpose.

A Manual of Auscultation and Percussion: Embracing the Physical Diagnosis of Diseases of the Lungs and Heart and of Thoracic Aneurysm. By AUSTIN FLINT, M.D., LL.D. Fifth edition, thoroughly revised by J. C. WILSON, M.D., Lecturer on Physical Diagnosis in the Jefferson Medical College. Philadelphia: Lea Brothers & Co. 1890.

The work before us has been frequently reviewed, and it is well known to every practitioner in the land as affording reliable aid in the study and practice of the difficult art of physical diagnosis. The task of revision and republication has been performed with skill and good judgment. It will be noted, on glancing through the pages, that there has been more revision than enlargement. Many editors of the later editions of the works of great men seem to be unable to resist the temptation of inserting long paragraphs in brackets, which do not increase the value of the work, though they add to its size and weight.

In reading a reproduced work of this kind we wish to ascertain the opinions of the great authors upon the point unaltered and unmodified by the views of any revisor or editor.

Though it is useless to recommend *Flint on Auscultation* to a profession already aware of its great value, yet we can certainly say that this fifth edition is well worthy of all commendation.

Twelve Lectures on the Structure of the Central Nervous System. For Physicians and Students. By Dr. Ludwig Edinger, Frankfort-on-the-Main. Second revised edition. With 133 illustrations. Translated by Willis Hall Vittum, M.D., St. Paul, Minn. Edited by C. Eugene Riggs, A.M.., M.D., Professor of Nervous and Mental Diseases, Univ. Minnesota. Philadelphia and London: F. A. Davis. 1890.

Dr. Edinger's work is the standard treatise on the anatomy of the central nervous system in Germany. The English translation is from the recent revised and improved second edition, and is in every respect carefully done. The profession in this country and England certainly owe a debt of gratitude to the translators for placing within their reach an accurate and plain account of one of the most difficult of subjects. The difficulties of the subject are, however, to a considerable extent overcome through the liberality of the publishers in reproducing the numerous and well-executed diagrams to be found in the German edition.

Elements of Practical Medicine. By Alfred H. Carter, M.D., Lond., Physician to the Queen's College, Birmingham. Sixth edition. London: H. K. Lewis. 1891.

The fact that this epitome of the Practice of Medicine has arrived at its sixth edition proves that it supplies a want that is really felt. The *Elements of Practical Medicine* were published some ten years ago with a view to providing the student with a simple introduction to the study of systematic medicine. The effort of the author has plainly been successful. We find in

the volume before us a resumé of all that is important in the practice of medicine. All that a junior student requires is given him in what may not inaptly be termed a digestible form, and although the compass of the work is limited, no matter of any importance has been omitted.

We commend the work as being well suited for the use of junior students beginning their hospital career. They will find it a useful and perfectly trustworthy guide in the earlier stages of their clinical work, and if they devote to it the due amount of time and attention they will find themselves well repaid for their trouble.

Saunders' Pocket Medical Lexicon: Being a Dictionary of Words and Terms used in Medicine and Surgery. By JOHN M. KEATING, M.D., Fellow of College of Physicians, Philadelphia; Editor of the "Cyclopædia of Diseases of Children," etc.; and HENRY HAMILTON. Philadelphia: W. B. Saunders, 913 Walnut street. 1890.

Saunders' Medical Lexicon is a work intended for the student. In his daily work the student is constantly hearing new words and phrases, the meaning of which at the time would be a great assistance to him. This handy pocket lexicon will answer this purpose well.

The Physician's Hand-book for 1891. By ALBERT D. ELMER, M.D. New York: G. P. Putnam's Sons, *The Knickerbocker Press*. 1891.

The Physician's Hand-book, now in its thirty-fourth year of publication, in addition to the usual contents of a visiting list, contains many features which will render it very acceptable to the busy practitioner. There is a very copious index to the more important symptoms and treatment of both internal and external diseases.

The Year-Book of Treatment for 1891. A Critical Review for Practitioners of Medicine and Surgery. Philadelphia: Lea Brothers & Co. 1891.

The volume of the Year-Book for 1891 is in all respects equal,

if not superior, to previous issues. The authors of the different articles are men who are thoroughly conversant with their subject and with the needs of the general practitioner.

Society Proceedings.

MEDICO-CHIRURGICAL SOCIETY OF MONTREAL.

Stated Meeting, February 20th, 1891.

F. J. SHEPHERD, M.D., PRESIDENT IN THE CHAIR.

Perforated Vermiform Appendix.—DR. SHEPHERD exhibited this specimen, which he had removed from a patient aged 29. A portion of the wall of the appendix had sloughed, causing a perforation, through which protruded a concretion the size of a white bean. The patient, three days before the operation, had been seized with sudden pain, vomiting, and tenderness in right iliac fossa. The appendix was found without difficulty in a pus cavity. The patient made a rapid and uninterrupted recovery.

DR. MACDONNELL had seen the patient previous to operation. This disease, which formerly had been so rarely met with, was now quite frequent. He considered the hardness of the abdominal parietes, particularly on the affected side, one of the most characteristic features. He had noticed that the symptoms frequently improved after the first shock was over, and, notwithstanding that the character of the symptoms in many cases was that of general peritonitis, the lesion was local. This he had corroborated in three cases, two after operation and one at the autopsy. In one case of interest which he now had under observation, the pulse remained low and the abdominal symptoms improved whilst the temperature was increasing.

DR. BULLER referred to the relative frequency of appendicitis amongst the Germans, which Virchow had attributed to their larger consumption of vegetable food, which dilated the appendix.

DR. SHEPHERD remarked that the only animals possessed of an appendix were the higher apes, the wombat, and man.

Comparative Pathology.—DR. SHEPHERD showed the skeleton of a parrot with a fracture of the left femur, which had produced

much shortening of the limb. The right side of the pelvis was well developed, but the left was atrophied, in consequence, no doubt, of the disease of the muscles of that side caused by the shortened limb.

Chronic Pyosalpinx.—Dr. H. D. Hamilton exhibited the specimen. The pelvic organs were found matted together by old adhesions, and were adherent to the abdominal parietes on the left side. The left ovary contained a multilocular cyst about the size of an orange ; from the left cornua of the uterus extended a winding sinus which communicated with the rectum. The patient was 26 years of age ; married at 17, and had up to that time been in good health. She was taken very ill shortly afterwards with considerable pain in the left side of the abdomen, which invalidated her for six months. She was never afterwards absolutely free from pain in the left inguinal region, and subject, at long intervals, to acute exacerbations. The patient was operated on, in the Western Hospital, in 1885. On 1st January, '91, she was admitted to the General Hospital under Dr. Molson. She was then in a very weak condition, and complained of considerable abdominal pain. Erysipelas of the face appeared the second day after her admission, which subsided on the seventh day. The patient died on the thirteenth day with uræmic symptoms.

Puerperal Septicæmia.—Dr. Johnston exhibited the uterus from a patient who had died two months after confinement with symptoms of puerperal septicæmia. There was chronic proliferative endometritis. A pelvic abscess was found outside the peritoneum on the left side, chiefly about the left common iliac vein, which showed septic thrombo-phlebitis with extension of thrombus to the vena cava. There was also multiple embolic pneumonia of the right lung, with septic fibrino-purulent pleurisy on the right side.

Dr. Gardner, who had examined the patient shortly after her admission to the hospital, discovered the uterus displaced backwards, and somewhat limited in its movements, with slight tension of the left broad ligament. The temperature was decidedly septic, though no signs of pus could be discovered anywhere.

There was no pain, tenderness, or abdominal distension. A careful examination of the external parts of the pelvis, the various foramina and orifices through which pus could burrow, had been made. As there was nothing to guide the introduction of instruments, he had not thought it justifiable to operate.

Dr. Shepherd thought that surgical interference in such a case would probably be of no avail.

Tubercular Testes.—Dr. Johnston showed, for Dr. Jas. Bell, two specimens of tubercular testes which had been removed from patients subsequent to the treatment of injections of tuberculin. The first testicle exhibited was small. There was an abscess the size of a bean in the epididymis, and the vas deferens and tunica vaginalis were thickened. The disease was confined to the epididymis and the spermatic cord, the body of the testis being free from disease. In the second specimen, the testicle was considerably enlarged ; great thickening of the tunica vaginalis and of the cellular tissue about the epididymis. The whole of the epididymis was transformed into a continuous mass. Some firm, greyish-white, opaque, miliary tubercles were scattered throughout the body of the testis—about a dozen being seen on a cut surface. There was no appearance of hyperæmia or diffuse infiltration about these. Both organs showed nothing unusual which could be attributed to the action of the tuberculin.

Dr. Jas. Bell remarked that he had reported to the Society the result of the treatment in the first of these cases four weeks ago. Since then, the patient had been given three injections with the usual reaction. The last injection was on Feb. 15th, which was followed by pain in the epididymus at the lower part of the right testicle, which subsided with the fever. This patient had also been the subject of tubercular ulcerations of the bladder (*vide* report of Jan. 23rd, Case No. 4). The patient from whom the second specimen had been removed had received but two injections, which produced a severe reaction in the diseased organ, considerable heat and pain. The presence of the miliary tubercles he did not attribute to the lymph, but to the active condition going on previous to its use.

Dr. Roddick asked if any effect was produced on the bladder in the first case referred to.

Dr. G. T. Ross inquired if there was any disease in the lungs in these cases.

Dr. Bell replied that the bladder disease had existed for five years, but that the patient had been entirely relieved from acute symptoms since October 2nd, 1890. No pus or change in the urine had been noticed after the injection. There was no trace of tubercular disease in the lungs. This patient (the first one) had received eight injections before any reaction appeared in the right testicle.

Sarcoma of the Testis.—Dr. Roddick, who exhibited the specimen, remarked that the patient, a man aged 40, had first noticed swelling in the scrotum nearly two years ago. Hydrocele had persisted throughout the case, for which the scrotum had been tapped nine times, and once injected with iodine. When he came under examination, a tumor, in the left side of the scrotum, could be felt through the fluid—a hard, oval shaped mass, with a nodular feel, producing no tenderness on pressure. There was no implication of the cord. The tumor had all the appearances of a chronic sarcocele. There was no history of syphilis or cancer. It having been decided to operate, Dr. Roddick, on cutting down, found the cord soft, yielding and not enlarged. There was an enormous hydrocele. The testicle proved to be sarcomatous. The whole of the diseased mass was removed.

Dr. Johnston, who reported upon the pathological appearances, remarked that the testicle was about the size of a small apple. There were extensive adhesions and thickening about the tunica vaginalis. In the epididymis, a firm, caseous mass as large as a cherry was shown, with smaller masses in the neighborhood, evidently old inflammatory deposits. In the body of the testis, near the lower extremity, was a soft, smooth, medullary-looking tumor, pinkish-gray in color, its borders made out with difficulty. The cut surface was smooth, and yielded, when scraped, a grayish turbid juice, which, under the microscope, showed large round cells lying within large spaces, with a delicate fibrillated structure surrounding each individual cell. The vas deferens was not involved. Diagnosis: alveolar (large round cell) sarcoma.

Carcinoma of the Breast.—Dr. Roddick related the following clinical history: The patient, a young woman, aged 27, single, had come to the hospital complaining of a hard lump in her left breast. She had had typhoid fever two years ago; with this exception, her health had always been good. There was no history of cancer in the family. The mother probably had had lupus. No history of injury. The patient first noticed the lump in her breast two years ago, which had slowly increased in size during the past two months. A little pain had been felt in the tumor, but not lancinating in character. On examination, a tumor was felt, somewhat circular in outline, with a diameter of about three inches. It was situated with its lower border just above the nipple, and between it and the sternal end of the clavicle. It was not painful on handling, and felt firm and somewhat nodular, giving an impression of hardened gland tissue. The tumor was freely movable over the subjacent tisssues, not attached to the skin, and the nipple not retracted. From these signs and the age of the patient, it appeared more, as Dr. Roddick remarked, like an adenoma-fibroma, or an adenoma-sarcoma. At the operation, on cutting into the tumor, it was so evidently malignant that the whole breast was removed. Several glands in the axilla which were found slightly enlarged were also removed.

Dr. Shepherd had examined the patient previous to the operation, and had also thought it a benign growth, though suspicious of some enlarged glands in the axilla. He had seen one case of carcinoma in as young a patient. He believed that all tumors of the breast should be removed in young or old.

Urinary Calculi.—Dr. Roddick exhibited two calculi removed from a man aged 71. Owing to the patient's age, he had selected the lateral operation in preference to the supra-pubic. The perineum was very deep, which made it somewhat difficult to reach the bladder. The large stone weighed four drachms and thirty-eight grains, the smaller sixteen grains. Symptoms of stone had existed for one year only.

Enlarged Bursæ.—Dr. Bell brought before the Society a man aged 38, farmer, with enlarged bursæ in each ham, beneath

the inner head of the gastrocnemius. These had been aspirated several times without benefit. Dr. Bell had made an exploratory incision with the intention of removing the bursæ, if practicable. He found that these had a direct communication with the knee-joint, and appeared somewhat like a hernia of the synovial membrane of that joint.

Dr. Shepherd considered a dissection of the bursæ in these cases very difficult, with possibly no good result.

Glycosuria.—Dr. J. H. B. Allen read a report of a case of glycosuria, which appears in this number of the Journal.

Dr. Jas. Stewart asked if the knee-jerk had been tested, and if any paresis had been noticed. He thought the case one of multiple neuritis, which may occur with glycosuria.

Molluscum Fibrosum.—Dr. Bell showed to the Society a case of molluscum fibrosum which had followed a peculiar course. The patient had developed sarcoma of the sciatic nerve, which was removed last December, but recurred; and the limb was amputated three weeks ago. Such cases were very rare; two only were mentioned in *Virchow's Archives*. Dr. Bell had met with three cases within two and a half years.

The Diagnosis and Treatment of Epilepsy.—Dr. James Stewart read an interesting paper on this subject, which was published in the April number of this Journal.

Stated Meeting, 6th March, 1891.

F. J. Shepherd, M.D., President, in the Chair.

Notes on the Insane and their Treatment.—Dr. Wesley Mills read a paper of interest on the above subject, which appears in the present number of this Journal.

The Diagnosis and Treatment of Epilepsy.—Dr. James Stewart gave a synopsis of his paper read at the previous meeting of the Society.

Discussion.—Dr. Lapthorn Smith had noticed a loss of will power in epileptics, in whom slight irritation produced fits. He narrated the case of a woman, an epileptic, with dyspeptic symp-

toms, who had considerably improved upon suitable diet. In the medicinal treatment of epilepsy, he used bromide of sodium in preference to bromide of potassium, as being less irritating, and less apt to produce acne. He considered hystero-epilepsy a modification of epilepsy.

Dr. Alloway, referring to the application of forceps to the head in difficult cases as a factor in the production of epilepsy, thought the results now obtained by the Cæsarian operation worthy of consideration; besides, avoiding the great liability of injury to the pelvic floor and the danger to the child. By the Sänger-Leopold methods of operating, the mortality had been reduced to five per cent. Dr. Kelly, of Baltimore, had had four cases of Cæsarian section with good results.

Dr. Armstrong wished to know if there were any statistics to prove that the majority of epileptics among children, apart from heredity, was found amongst those who had been delivered by forceps. He considered this of importance to the general practitioner. He had knowledge of two cases of epilepsy in children on whom forceps had been used. One, 3½ years of age, had died a short time ago from pneumonia. The post-mortem, performed by Dr. Johnston, failed to reveal any signs of injury which could be attributed to the forceps. The skull, membranes and brain appeared normal. He considered Cæsarian section too severe and dangerous an operation to adopt in such cases where forceps could be used.

Dr. McConnell believed that most cases of epilepsy could be traced to some reflex irritation. By some, the cause was believed to exist in an ocular defect. He asked if it were not possible, in all cases of epilepsy, to find some cause of irritation, which, if removed, would bring about a cure, without the use of bromides.

Dr. Foley considered that diet was more important than bromides in the treatment of epilepsy.

Dr. Jas. Stewart, in his reply, in answer to Dr. Smith, remarked that, with regard to the beneficial action of the different bromides, it was practically of little difference which was used, as they were all converted into sodium bromide. Some bromides,

however, were more irritating than others. The production of acne was not due to any particular salt used, but to the decomposition of the bromide and the elimination of the bromine. In reply to Dr. Armstrong, he had mentioned the forceps as one of the rarer exciting causes of epilepsy. Sometimes the slightest injury, without effecting any gross change, produced a molecular disturbance which was sufficient to cause epilepsy. Dr. Stewart referred to the interesting nature of Dr. Mills' paper and the good results that were being obtained by the line of treatment advocated.

Dr. Mills based treatment on causation. He attached much importance to afferent impulses. Taking as a unity the nerve cell with its afferent and efferent nerves, we get what exists in all complicated organisms. These are subject to disturbance whether produced by disease or not. A brain may be perfectly normal as far as the eye or the microscope can detect, and yet be abnormal. Dr. Mills referred to the instability of the nerve cells mentioned by Dr. Stewart. When tired, the nerve cell became irritable, which called for rest. He believed that ingoing impulses modified outgoing impulses. So in treating the insane we should alter the environments, give good food, and prescribe rest. He considered the drill exercises excellent. It sets energy off and cultivates the will.

Dr. Duquet agreed with Dr. Mills in the treatment of the insane. It was not by the use of drugs that the greatest progress was to be made, but by suitable amusement and employment. He believed that the curable should be separated from the incurable. He praised the system of housing the insane practiced in Bâsle, and since adopted in Ogdensburg, N. Y. Three separate buildings were erected—a hospital for curable cases, an asylum for chronic cases, and an infirmary for the weak-minded.

Dr. Alloway exhibited the following pathological specimens:

(1) *A Small Ovarian Cystoma and Hydrosalpinx of Left Side; Hæmatosalpinx with Cystic Ovary of Right Side.*—The subject of this specimen was referred to him by Dr. Buller. She complained of asthenopia, no organic disease of the eye

existing. She was referred to him for examination of pelvic organs. Under ether, considerable enlargement of the left ovary was detected, but nothing abnormal was apparent on the right side. The specimens exhibited showed how much disease of this nature could exist with so few subjective symptoms. The patient, now nine months since the operation, writes to say that her eyesight is sufficiently improved to allow her to read and do needlework, and that her general health has been quite restored.

(2 *A large Interstitial Fibro-myoma with Necrotic Centre.*—This patient was 50 years of age, and suffering, when brought to Dr. Alloway, from septicæmia. She was bloodless, high temperature, rapid pulse, unable to stand from exhaustion, and, generally speaking, in a dying condition. Had spent the past two years off and on in foreign hospitals for the relief of menorrhagia. Examination revealed a large myomatous mass about the size of a child's head at term, occuping the vagina. At its lower extremity was an opening leading to a necrotic centre with intensely fœtid discharge. Urine was albuminous, with fatty and granular casts. Loud cardiac bruit with dilatation. Dr. Alloway stated that at first he refused to operate under these unfavorable circumstances, but was eventually importuned by the relatives of the patient to give her a chance of recovery by removal of the tumor. The operation was completed as rapidly as possible, piece-meal, by the scissors and vulsellum. Very little blood was lost, but she died comatosed twenty hours after the operation. There was complete suppression of urine during this time.

(3) *Small Pedunculated Myoma.*—This patient was unmarried, aged 37 ; suffered from metrorrhagia during the past three months. The small growth was twisted off with the vulsellum. The cavity of the uterus was dilated, thoroughly curetted with a sharp instrument, and packed with iodoform gauze. Patient left hospital in three weeks, restored to health.

Tuberculosis of the Knee.—Dr. James Bell exhibited a specimen of the synovial membrane from a case of tuberculosis of the knee in a child. The patient had previously been treated with injections of tuberculin. On opening the joint two suppu-

rating points were noticed, one on each side. There was a good deal more hyperæmia, and the tissues were much more fragile than is usually seen in such cases, and separated more easily from the surrounding tissues.

Dr. Johnston reported that the pus was more like muco-pus, probably due to an admixture with synovial fluid. It contained no tubercle bacilli, nor were there any micrococci, which was unusual when pus was found. The gelatinous changes were well marked. There was no eruption of miliary tubercles.

Stated Meeting, March 20th, 1891.

F. J. Shepherd, M.D., President, in the Chair.

Thrombosis of the Portal Vein.—Dr. J. A. Springle exhibited this specimen from a patient, aged 30, who had died with symptoms of peritonitis. There had been ascites and hæmatemesis. At the autopsy was found an extensive adhesive peritonitis. The hepatic artery was considerably dilated, and its walls thickened. The portal vein appeared as a flattened fibrous cord about the thickness of a slate pencil, sending fibrous branches to the under surface of the liver. The condition seems to have been a thrombosis at the junction of the superior mesenteric and splenic veins from peritonitis. Dr. Springle would report the case in full at a later date.

Appendicitis, Abscess of Pancreas and Liver, and Phlebitis.—Dr. G. E. Armstrong, who exhibited these specimens, remarked that the patient, a young man aged 35, had first complained of abdominal pain one year ago, which had lasted but a few hours. On the 31st of January he suffered from a second attack, which disappeared without any ill effects, when on the 2nd March he had a third and more severe attack. The temperature, which, shortly after the onset, had fallen to normal, rose again for the following ten days. There was no abdominal distention, no difference in outline, and pressure was well borne. The symptoms became severe on the twenty-fifth day of his illness, when Dr. Armstrong, assisted by Drs. Roddick and Perrigo,

operated. The appendix, containing one drachm of pus, was removed. There was nothing else visible. The symptoms became worse, and the patient died the third day after the operation. At the post mortem was found what he believed to be the cause of the pyæmic condition. The lower border of the omentum had become adherent to the anterior wall of the abdomen, near the pelvis, and was gangrenous. A septic phlebitis had thus extended along the mesenteric veins up the portal and splenic veins to the liver and the spleen. Metastatic abscesses were found in both the liver and the pancreas. He had had a similar case ten years ago.

Appendicitis.—Dr. G. E. Armstrong also exhibited a second specimen of appendicitis. The appendix, in this case, had been removed seventy hours after the onset of the symptoms which had been typical of the disease. At the operation one pint of pus was removed, and the whole of that side of the abdomen thoroughly washed out and drained. The operation failed to relieve the patient. The post-mortem showed extensive septic inflammation of both the visceral and the parietal layer of the peritoneum There was no perforation or strangulation. Although the operation here had been performed early, the cavity thoroughly cleansed and free drainage provided, it had, nevertheless, proved unsuccessful.

Dr. Lapthorn Smith remarked that it was difficult to know, in cases of appendicitis, when to operate and when not to operate. He asked the probable cause of the gangrene of the omentum, and whether Dr. Armstrong was in favor of the median or lateral operation.

Dr. Geo. Ross said that the existence of the great danger from septicæmia and pyæmia from appendicitis was well recognized. Pyelo-phlebitis, septicæmia and pyæmia frequently occurred from the absorption of purulent matter into the veins. He did not see how we would be justified in attributing the chief cause of pyæmia, in the case mentioned, to an adhesion to a structure surrounding a sloughing appendix.

Dr. Shepherd explained the sudden disappearance of symptoms in cases of appendicitis, such as acute abdominal pain and

vomiting, by the pus which got into the appendix possibly getting back into the intestine. Many cases of appendicitis, he believed, were fatal from the first.

Dr. Armstrong, replying, remarked that the site of the incision he selected depended upon the case,—the lateral when the disease was localized; the median when the affection had already extended. He believed that recurring cases should be operated on. In the two cases which he had met with of appendicitis with pyelo-phlebitis, there had been an adhesion of the omentum at the site of the sloughing appendix, which led him to think that this condition had had something to do in the causation.

The Koch Treatment of Tuberculosis.—Dr. McConnell read, at some length, a paper on the above subject, giving a report of the cases he had witnessed treated in the Berlin hospitals. He referred particularly to the cases of tuberculosis of the lungs.

Dr. Roddick stated that the treatment had been discontinued in the Montreal General Hospital. In surgical cases the reaction had proved too violent and sometimes disastrous. He mentioned the case of a child with tuberculous disease of the ankle-joint, limited to the outer part of the tarsus, in whom, after three injections of tuberculin, rapid destruction of the bones had occurred, showing the great necessity for caution.

Selections.

American Inventions and Discoveries in Medicine, Surgery and Practical Sanitation. (By Dr. John S. Billings, United States Army.)—In connection with this celebration of a century's work of the American Patent System, I have been requested by the Advisory Committee to prepare a brief paper upon inventions and discoveries in medicine, surgery and practical sanitation, with special reference to the progress that has been made in this country in these branches of science and art. It would be impossible to present on this occasion such a summary as would be of any special interest or use, of the progress which has been made in medicine and sanitation during the century, either by the world at large or by American physicians and sanitarians in particular; and I shall therefore confine my remarks mainly to the progress which has been made in these branches in connection with mechanical inventions and new chemical combinations, devised by American inventors,—which will require much less time.

The application of the patent system to medicine in this country has had its advantages for certain people, has given employment to a considerable amount of capital in production (and to a much larger amount in advertising), has contributed materially to the revenues of the government, and has made a great deal of work for the medical profession.

So far as I know, but one complete system of medicine has been patented in this country, and that was the steam, Cayenne pepper and lobelia system—commonly known as Thomsonianism,—to which a patent was granted in 1836. The right to practise this system, with a book describing the methods, was sold by the patentee for twenty dollars, and perhaps some of you may have some reminiscences of it connected with your boyish days. I am certain I shall never forget the effects of "Composition Powder," or of "Number Six," which was essentially a concentrated tincture of Cayenne pepper, and one dose of which was enough to make a boy willing to go to school for a month.

From a report made by the Commissioner of Patents in 1849, it appears that eighty-six patents for medicines had been granted up to that date ; but the specifications of most of those issued before 1836 had been lost by fire. The greater number of patents for medicines were issued between 1850 and 1860. The total number of patents granted for medicines during the last decade (1880-1890) is 540. This, however, applies only to " patent medicines," properly so-called, the claims for which are, for the most part, presented by simple-minded men who know very little of the ways of the world. A patent requires a full and unreserved disclosure of the recipe, and the mode of compounding the same, for the public benefit when the term of the patent shall have expired ; and the Commissioner of Patents may, if he chooses, require the applicant to furnish specimens of the composition and of its ingredients, sufficient in quantity for the purpose of experiment. The law, however, does not require the applicant to furnish patients to be experimented on, and this may be the reason why the commissioner has never demanded samples of the ingredients. By far the greater number of the owners of panaceas and nostrums are too shrewd to thus publish their secrets, for they can attain their purpose much better under the law for registering trade-marks and labels, designs for bottles and packages, and copyrights of printed matter, which are less costly, and do not reveal the arcanum. These proprietary medicines constitute the great bulk of what the public call " patent medicines."

The trade in patent and secret remedies has been, and still is, an important one. We are a bitters- and pill-taking people ; in the fried pork and saleratus-biscuit regions the demand for such medicines is unfailing, but everywhere they are found. I suppose the chief consumption of them is by women and children, —with a fair allowance of clergymen, if we may judge from the printed testimonials. I sampled a good many of them myself when I was a boy. Of course, these remarks do not apply to bitters. One of the latest patents is for a device to wash pills rapidly down the throat.

According to the Census of 1880 there were in the United

States 592 establishments devoted to the manufacture of drugs and chemicals, the capital invested being $28,598,458, and the annual value of the product $38,173,658, while there were 563 establishments devoted to the manufacture of patent medicines and compounds, the capital invested being $10,620,880, and the annual value of the product $14,682,494.

A patent automatic doctor, on the principle of "put a quarter in the slot and take out the pill which suits your case," has been proposed, but this patent is said to be of Dutch and not of American origin. The idea of this may have come from Japan, for an old medicine case from that country, which I possess, has four compartments filled with pills, and the label says that those in the first compartment are good for all diseases of the head, those in the second for all diseases of the body, those in the third for all diseases of the limbs, and those in the fourth are a sure vermifuge.

From the commercial and industrial point of view, the great importance of patent and proprietary medicines is connected with advertising. The problem is to induce people to pay twenty-five cents for the liver-encouraging, silent perambulating, family pills, which cost three cents. Some day I hope that the modern professional expert in advertising will favor us with his views as to the nature and character of those people who were induced to buy Jones's liver pills or Slow's specific by means of the huge display of these names on the sides and roofs of barns and outbuildings, which display forms such a prominent feature in many of our American landscapes, as seen by the traveller on the railway. I suppose there must be such people, for I have a high estimate of the business shrewdness of the men who pay for these abominations. I should also like to know how much a farmer gets for allowing his buildings to be thus defaced. He must be hard-up; indeed such a display indicates that the place is probably mortgaged and that the poor man is heavily in debt.

Even the soap advertisers are not as guilty as the nostrum-makers in this particular style of nuisance, although they far exceed the latter in viciousness when it comes to applying art to ignoble purposes. The connection between progress in medi-

cine and soap advertisements may not be clear to you, but it exists nevertheless, for many of these soaps make work for the doctors by producing skin troubles.

Upon the whole, I should think that the number of people who would take some trouble to avoid purchasing an article which is thus advertised must be rapidly increasing, so that such displays will soon be no longer profitable. The great importance of advertising does not relate to the placard or chromo business, but to its relations to periodical literature,—to the daily and weekly press and the monthly magazines and journals. To the establishment and support of some of our newspapers and journals, medical as well as others, these proprietory and secret medicines, cosmetics, food-preparations, etc., have no doubt contributed largely.

I am sorry to say that I have been unable to obtain definite information as to the direct benefits which inventions of this kind have conferred on the public in the way of cure of disease or preventing death. Among the questions which were not put in the schedules of the last census were the following, namely: Did you ever take any patent or proprietary medicine? If so, what and how much, and what was the result? Some very remarkable statistics would no doubt have been obtained had this inquiry been made. I can only say that I know of but four secret remedies which have been really valuable additions to the resources of practical medicine, and the composition of all these is now known. These four are all powerful and dangerous, and should only be used on the advice of a skilled physician. Most of such remedies have little value as curative agents, and some of them are prepared and purchased almost exclusively for immoral or criminal purposes.

In France, the sale of secret and patent medicines is not allowed unless they have been examined and approved by the National Academy of Medicine, and the same general rule holds good in Italy and Spain.

The Japanese have followed the French method, and their experience is interesting. The Central Sanitary Bureau established a public laboratory for the analysis of chemicals as a medi-

cine. The proprietors of each of such medicines were bound to present samples, and the names and proportions of the ingredients, directions for its use, and explanations of its supposed efficacy. According to a report in the *British Medical Journal*, during the first year there were 11,904 applicants for license to prepare and sell 148,091 patent and secret medicines. Permission for the preparation and sale of 58,638 different kinds were granted, 8,592 were prohibited, 9,918 were ordered to be discountenanced, and 70,943 remained to be reported on. The great majority of those which were authorized were of no efficacy, but few being remedial agents ; but their sale was not prohibited, as they were not found to be dangerous to the health of the people. I do not vouch for these figures, which throw our records entirely in the shade.

In 1849 a special committee of the House of Representatives reported to the House a bill to prevent the patenting of medicines, accompanied by a report. This bill provided that after the passage of the act, letters patent shall not be granted for any article whatever as a medicine, provided that this shall not apply to machines, instruments or apparatus. When the matter came before the House for consideration, the bill was laid on the table.

You are all aware that the great majority of the medical profession consider it to be improper and discreditable for a physician to patent a remedy. The Medical Code of Ethics declares that it is derogatory to professional character "for a physician to hold a patent for any surgical instrument or medicine ; or to dispense a secret nostrum whether it be the composition or exclusive property of himself or others. For if such nostrum be of real efficacy, any concealment regarding it is inconsistent with beneficence and professional liberality ; and if mystery alone give it value and importance, such craft implies either disgraceful ignorance or fraudulent avarice. It is also reprehensible for physicians to give certificates attesting the efficacy of patent or secret medicines, or in any way to promote the use of them." Like all legislation, this is a formal declaration of the customs of the profession, which customs are of great antiquity. The prin-

ciple upon which it is founded is thus expressed by Lord Bacon: "I hold every man a debtor to his profession; from the which, as men of course do seek to receive countenance and profit, so ought they of duty to endeavor themselves by way of amends to be a help and ornament thereunto."

The rule, however, is not always adhered to by physicians, the most notable exception having been, perhaps, the use of Koch's lymph before its composition was revealed. As regards the patenting of surgical instruments and apparatus, the opinion of the great majority of physicians is in accordance with the rule just stated, but there are some who question its propriety, although they obey it—and there are few who would not use a patented instrument in a case to which they thought it was applicable. The total number of surgical instruments and appliances patented during the past decade has been about 1,200, the patents having been in almost all cases taken out by manufacturers. With these may be classed dentists' tools and apparatus, of which about 500 have been patented during the last ten years, and in this field of invention the United States leads the world. The same may be said with regard to artificial limbs, of which our great war gave rise to many varieties.

As you know, the law prescribes that a patent may be given for a "new and useful art, machine, manufacture, or composition of matter." I used to think that the word "useful" in this law had its ordinary meaning, and, therefore, wondered exceedingly as to why the Patent Office examiners allowed patents to certain things which came under my notice. One day, however, I received an article from the Patent Office, with the request for a report as to whether it was useful in the sense in which that word was used by the Office, namely, "not pernicious or prejudicial to public interests—capable of being used"—and then for the first time I understood one of the first principles of the patent law of the United States; that is, that it does not take into consideration the degree of utility in the device, or, in other words, that "useful" means "harmless."

If a patent is granted to a medicine, it must be as a composition of matter as a special article of manufacture. The practice

of the Patent Office in these matters is not generally understood. It does not now consider that medical prescriptions are inventions within the meaning of the law, or that a mere aggregation of well-known remedies to obtain a cumulative effect is a patentable composition of matter. A certain number of claims for government protection in the form of patents or trade-marks are made for medical compounds or for apparatus, under false pretences; that is to say, the claim is for a new remedy for rheumatism or dyspepsia, or displacement, with a warning against their use under certain conditions, the real design being that they are to be used under precisely these conditions in order to procure abortion, etc. These are sometimes difficult cases for the Patent Office to treat properly, for the law does not allow a large discretion for refusal on mere suspicion, and when there is ostensible and possible utility (in the Patent Office sense) it can hardly reject the claim on the ground that the invention *might* be used for immoral purposes.

I said in the beginning that I cannot, on this occasion, give any sufficient account of the progress of invention and discovery in medicine and sanitation during the century just gone. The great step forward which has been made, has been the establishment of a true scientific foundation for the art upon the discoveries made in physics, chemistry and biology. One hundred years ago the practice of medicine, and measures to preserve health, so far as these were really efficacious, were in the main empirical—that is, certain effects were known to usually follow the giving of certain drugs, or the application of certain measures, but why or how these effects were produced was unknown. They sailed then by dead-reckoning, in several senses of this phrase.

Since then, not only have great advances been made by a continuance of these empirical measures in treatment, but we have learned much as to the mechanism and functions of different parts of the body, and as to the nature of the causes of some of the most prevalent and fatal forms of disease; and, as a consequence, can apply means of prevention or treatment in a much more direct and definite way than was formerly the case. For

example, a hundred years ago nothing was known of the difference between typhus and typhoid fevers. We have now discovered that the first is a disease propagated largely by ærial contagion and induced or aggravated by over-crowding, the preventive means being isolation, light and fresh air; while the second is due to a minute vegetable organism, a bacillus, and is propagated mainly by contaminated water, milk, food and clothing; and that the treatment of the two diseases should be very different.

The most important improvements in practical medicine made in the United States have been chiefly in surgery in its various branches. We have led the way in the ligation of some of the larger arteries, in the removal of abdominal tumors, in the treatment of diseases and injuries peculiar to women, in the treatment of spinal affections and of deformities of various kinds. Above all, we were the first to show the uses of anæsthetics—the most important advance in medicine made during the century. In our late war we taught Europe how to build, organize and manage military hospitals; and we formed the best museum in existence illustrating modern military medicine and surgery. Our contributions to medical literature have been many and valuable; and our government possesses the largest and best working medical library in the world. We have more doctors and more medical schools, in proportion to the population, than any other country, and while this is not good evidence of progress, I am glad to be able to say that the standard of acquirements in medical education has been, and is now, rising, and our leading medical schools are now being equipped with buildings, with apparatus, with laboratories, and, most important of all, with brains, which enable them to give means of practical instruction equal to any to be found elsewhere.

As regards preventive public medicine and sanitation, we have not made so many valuable contributions to the world's stock of knowledge,—chiefly because, until quite recently, we have not had the stimulus to persistent effort which comes from density of population and its complicated relations to sewage disposal and water supplies; nor have we had the information

relative to localized causes of disease and death which is the essential foundation of public hygiene, and which can only be obtained by a proper system of vital statistics. We can, however, show enough and to spare of inventions in the way of sanitary appliances, fixtures and systems for house drainage, sewerage, etc.; for the ingenuity of inventors has kept pace with the increasing demands for protection from the effects of the decomposition of waste matters, as increase of knowledge has made these known to us. The total number of patents granted for sanitary appliances during the last decade (1880–1980) is about 1,175. If good fixtures necessarily involved good plumbing work, we could easily make our houses safe so far as drainage is concerned; but a leaky joint or a tilted trap makes the best appliance worthless. The impulse to improvements in this direction has come mainly from England, where most of the principles of good work of this kind have been developed; but we have devised some details better adapted to our climate and modes of construction, and while many of the patent traps and sewer-gas excluders are only useful in the patent-law sense, and some not even in that, it is nevertheless true that the safety, accessibility and good appearance of plumbers' work has been largely increased during the last few years by patented inventions. Much the same may be said with regard to heating appliances, including ventilating stoves and fireplaces, radiators, etc., but I am unable to express my enthusiasm with regard to what are commonly called patent ventilators.

No doubt the greatest progress in medical science during the next few years will be in the direction of prevention, and to this end mechanical and chemical invention and discovery must go hand in hand with increase in biological and medical knowledge. Neither can afford to neglect or despise the other, and both are working for the common good. If the American patent system has not given rise to any specially valuable inventions in practical medicine or in theology, it must be due to the nature of the subjects, and not to any fault of the system.—*Boston Med. and Surg. Journal*, April 9, 1891.

The Malarial Element in Oophoralgia. —The terms "oöphoralgia" and its hybrid synonym "ovaralgia" have been used somewhat vaguely to describe pain in the region of the ovary which does not seem to be due to actual disease of that organ. Olshausen is the only writer on diseases of the ovaries who devotes a separate chapter to oöphoralgia, which, with Charcot, he seems to regard as a hystero-neurosis. Now, I know no reason which we should not regard certain pains in the ovarian region as purely neuralgic in their character, even though they may be primarily due to disease in or around the ovary which is not appreciable clinically. The question of the anatomical cause of ovarian pain I have discussed at length in a paper in *Wood's Reference Handbook;* it is sufficient to state that I believe it to be more frequently of extra- than of intra-ovarian origin—*i.e.*, it is due rather to the inclusion of nerves in perimetric adhesions than to the pressure upon terminal filaments by cicatricial tissue within the diseased gland, as is shown clinically by the relief afforded by separating such adhesions without removing the affected ovary. The subject of ovarian pain, whether menstrual or inter-menstrual, assumes no little importance from its bearing upon abdominal section, though happily it is now, *per se*, seldom regarded as a sufficient indication for laparotomy. Contributions to the palliative treatment of ovarian troubles should always be welcomed, and this is my excuse for presenting the following case:—

Mrs. M., aged 20 years, was first seen by me four years ago, soon after she had had an abortion at six weeks. She was suffering with severe pain in the right ovarian region, unaccompanied by evidences of acute inflammatory trouble. Examination showed well-marked anteflexion, with prolapse of the right ovary, the gland being neither much enlarged nor especially tender. Her husband, himself a physician, treated her locally, and she was soon up and about. She had had moderate dysmenorrhœa before marriage, which continued afterward, but was relieved by dilating the os internum just before the flow. Two years later she became pregnant again, and I delivered her by high forceps without local injury, except a slight laceration of the cervix. Her convalescence was normal. The prolapsed ovary gave her some trouble during

her pregnancy, but was not tender when I examined her three weeks after labor, and introduced a pessary in order to correct a tendency to retro-displacement and prolapsus. I treated her several times for the ovarian tenderness, but after a few months the pessary was removed, and she menstruated without pain, provided that the os internum was dilated, as before, previous to the flow, for the anteflexion still persisted. Eight weeks ago I was called to see her. She had been in excellent health for several months, menstruating regularly and without pain. Her monthly flow had begun the day before, and was followed by severe lancinating pains in the right ovarian region, which radiated down the back of the thigh and across to the opposite groin. The patient is more than usually courageous, and certainly did not exaggerate her symptoms. She possessed a marked tolerance for analgesics, and was given large doses of morphine, antipyrine and antifebrin, with only temporary relief. On palpaiing the abdomen I found extreme tenderness over the right ovary, while by the vaginal touch the organ could be felt distinctly enlarged and very sensitive. No rise of temperature or acceleration of the pulse. Diagnosis: Congestion of the ovary, the cause being unknown. I advised hot applications over lower portion of abdomen, hot vaginal doses, and phenacetin 10 grs., to be repeated in an hour. No relief was obtained, and it was necessary to give Majendie ♏xx during the night, to render the pain bearable. Next day the mild galvanic current was employed, one sponge being placed over the sacrum, the other over the right ovarian region; it increased the pain, and was discontinued. As menstruation had ceased, glycerin tampons were used with the idea of supporting the enlarged ovary. They afforded only temporary relief. The patient at this stage became very much discouraged, and began to wonder if oophorectomy would not be necessary. After three or four days of ineffectual treatment, I noticed that the pain seemed to be most severe in the afternoon, that it reached its acme during the night, and gradually subsided during the morning hours. Careful inquiry developed the fact that the patient had had a well-marked attack of intermittent fever of the quotidian type a few months before, which yielded to 20-gr. doses of quinine in two or three days. The chill occurred in the afternoon. There had been no history

of malarial neuralgia since then, but, noting the apparent periodicity and neuralgic character of the ovarian pain, I determined to test the value of quinine. On the following day 20 grs. were given in the forenoon; the pain was much less severe, so that the patient was able to sleep without an anodyne. A repetition of the dose on the next day resulted in a complete disappearance of the usual sharp, lancinating pain, only a soreness remaining at its former site. On the third day the dose of quinine was reduced to 15 grs., and on the following day to 10, which was given daily for a week. *The pain did not reappear.* The patient came to my office at the end of ten days and reported herself as doing well, and able to walk half a mile without pain or weariness. Local treatment (tampons and galvanism, with hot douches) was employed for a few days and then discontinued. The next menstrual period was unattended by pain in the ovarian region. At the time of writing the patient is feeling as well as ever.

A somewhat extended search through the literature has failed to reveal a similar case of ovarian neuralgia which showed such an evident paludic origin, and yielded so promptly to pure anti-periodic treatment. In all other treatment in which quinine was employed it was given in small doses (2 or 3 grs.), combined with morphine, aconite, or muriate of ammonia, and there was no malarial history. While the paroxysms of pain in the case reported were doubtless, at the outset, due to ovarian congestion, it does not militate against the fact that they showed a marked periodicity in their onsets. The fact that they were absent at the succeeding period is, in my opinion, a proof that the malarial poison had been overcome by the thorough course of quinine. It might be attributed solely to the effect of the local treatment during the intermenstrual period, were it not for the fact that the patient had been under similar treatment before, and felt perfectly well up to the time of her attack of dysmenorrhœa.

It seems to me that we are justified in regarding this case as one of malarial neuralgia affecting the nerves in and around the ovary, and comparable with similar neuralgia of the trifacial, except that here the pain was undoubtedly due to actual organic disease; but it assumed a periodical character through malarial influence, and was controlled by quinine.—*Dr H. C. Coe in American Journal of the Medical Sciences.*

Micro-organisms in Great Cities.—Prof. Tarnier, in his course of lectures on obstetrics, in 1890, referred to M. Miquel's researches on the relative abundance of micro-organisms in different places. One to the cubic metre of air is the proportion at the top of a high mountain. In the Parc de Montsouris, in the south of Paris, M. Miquel found 480 micro-organisms to the cubic metre of air, whilst in the Rue de Rivoli the proportion was 3,480. In a new room in the Rue Censier he found 4,500 to the cubic metre; more, that is to say, than in the centre of Paris in the open air. In a room in the Rue Monge he counted 36,000, in the Hotel Dieu 40,000, and in the Pitié, an older hospital, 319,000 micro-organisms to the cubic metre. At the Observatory, Montsouris, 650;000 microbes were found in a gramme (15 grains) of dust; in the room in the Rue Monge the amount was 2,100,000. In the hospitals the proportion was so high that counting the number of microbes in a whole gramme of dust was found to be impossible. The dust is the great conveyer of micro-organisms. At 2 A.M., when a city is most quiet, the fewest germs are to be found in the air: at 8 A.M., the industry of domestic servants and dustmen has already made the air teem with germs. At 2 P.M., the proportion has again greatly fallen; at 7 P.M., it is once more high, for many houses are being "tidied up"; besides sundry kitchen operations are unhygienic. Thus the "small hours," unfavorable in many respects to patients hovering between life and death, are the least septic of the twenty-four. The day proportions indicate that household duties cause more septic diffusion than is excited by traffic and industry.—*British Medical Journal.*

Mr. Edison's Explanation of the Ampere and the Volt.—During a recent examination a lawyer put the following question to Thomas A. Edison:

"Explain what is meant by the number of volts in an electric current?" To which he replied:

"I will have to use the analogy of a waterfall to explain. Say we have a current of water and a turbine wheel. If I have a turbine wheel and allow a thousand gallons per second to fall from a height of one foot on a turbine, I get a certain power, we will say one-horse power. Now the one foot of fall

will represent one volt of pressure in electricity, and the thousand gallons will represent the ampere or the amount of current. We will call that one ampere. Thus we have a thousand gallons of water or one ampere falling one foot or one volt or under one volt of pressure, and the water working the turbine gives one-horse power. If, now, we go a thousand feet high, and take one gallon of water and let it fall on the turbine wheel, we will get the same power as we had before—namely, one-horse power. We have got a thousand times less current or less water, and we will have a thousandth of an ampere in place of one ampere, and we will have a thousand volts in place of one volt, and we will have a fall of water a thousand feet as against one foot. Now the fall of water or the height from which it falls is the pressure or volts in electricity, and the amount of water is the amperes. It will be seen that a thousand gallons a minute falling on a man from a height of only one foot would be no danger to the man, and that if we took one gallon and took it up a thousand feet and let it fall down it would crush him. So it is not the quantity or current of water that does the damage, but it is the velocity or the pressure that produces the effect."

It has been calculated that the electromotive force of a bolt of lightning is about 3,500,000 volts, the current about 14,000,000 amperes, and the time to be about 1–20000 part of a second. In such a bolt there is an energy of 2,450,000,000 watts, or 3,284,182 h.p.—*Scientific American.*—(*North Carolina Medical Journal.*)

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NATURAL MINERAL WATERS.

The efficacy of natural mineral waters as a medicinal agent has long been known to professional men; but it is only of late years that their real value as a medicine has become the object of exhaustive study. It is now universally claimed for them that they have a well defined and undoubted curative value; and for this reason medical men are fond of prescribing them to patients, and of assisting to their more general habitual use by others.

The fact that our Government is now, and for some years past has been, subjecting these waters, when imported from foreign countries, to a duty of 20 per cent. ad valorem is regretable; and we are quite persuaded that its good sense will abolish altogether a tax that has the effect of qualifying the efforts of Canadian practitioners. In this connection it will be interesting to watch the fate of a largely signed physicians' petition to the Minister of Finance praying for the free admission into Canada of foreign natural mineral waters. Such a petition has been prepared, and is on the eve of presentation to the Ottawa Ministers. A somewhat similar one, signed by physicians in New York and other cities of the United States, and presented last year to the Senate and House of Representatives, had the effect of preventing, in that country, the imposition of a proposed prohibitive tax upon all mineral waters. It is not alone in the United States, however, that this interest of the medical profession commands Government sympathy; for it is general amongst European nations to accord freedom from taxation to

"Natural Mineral Waters." That the Government of this country will, for long, maintain its present attitude of antagonism to an almost universally expressed principle, is not probable; and we, therefore, look for good results following upon the presentation of the petition to which we have referred.

We believe that the institution of the existing duty of 20 per cent. ad valorem resulted from the Government officials' confessed inability to discriminate between a mineral water that is "natural" and one that is "artificial"—and this may or may not continue to be a difficulty; but we think that the Customs Department blundered somewhat when, in 1883 (natural mineral waters being then on the free list), it made its non-gaseous, or only slightly gaseous condition the test of a natural water; for it was then, and is now, known that the carbonic acid gas which such waters contain is one of the main elements of their constitution: and that in the absence of this preventive agent the water would soon deteriorate, if not undergo absolute decomposition. Perhaps the confusion of thought that produced this error may also have been concerned in implying an absolute impossibility when only a relative difficulty existed. We cannot do more here, however, than merely to suggest a way out from that difficulty.

The mineral waters in most general demand in this country are imported from Germany, and it would not, we think, be difficult to obtain, from the nearest British consul, a certificate to the effect that such and such a water is the product of such and such a natural spring and is not a manufactured article. Let the authorities accept such a certificate as the ultimate test of the nature of the water.

A proper appreciation of the value placed upon natural mineral waters by the medical profession would remove a much more real barrier to their free admission into Canada, than the questionable one of a Custom-House official's inability (which may be only incompetency) to distinguish a natural from a non-natural water.

TUBERCULIN.

Very conflicting reports are published as to the action of tuberculin. From some sources it is learned that its action in local tubercular processes is always salutary and beneficial; on the other side of the question, we hear that even in some German University centres its further use has been strictly prohibited. In Bonn, the prohibition is reported to include the cantharidate solutions also. The history of tuberculin, from its inception to the present time, shows how unwise and foolish it is to proceed on politico-commercial lines in order to establish the usefulness of a therapeutic agent.

The profession is far from being free from blame in the trend which the matter has taken.

A PROPOSED INTERNATIONAL AMERICAN MEDICAL CONGRESS.

At the coming meeting of the American Medical Association in Washington, Dr. Charles Reed, of Cincinnati, proposes to introduce a resolution to the effect that an invitation be issued to the different States and Colonies in North and South America to hold a medical congress in the United States.

PERSONAL.

—Dr. George E. de Schweinitz has been appointed Lecturer on Medical Ophthalmoscopy in the University of Pennsylvania.

—Dr. H. A. Hare has been appointed Professor of Materia Medica and Therapeutics in Jefferson College, Philadelphia, vice Dr. Bartholow, resigned.

—Dr. Nicholas Senn, of Milwaukee, has been appointed to the chair of Surgery in the Rush Medical College, Chicago, vacant by the death of Professor Parkes.

—Dr. James Bell, of Montreal, left for the Continent immediately after the termination of the clinical examinations at the General Hospital. He intends returning about the first of July.

MEDICAL FACULTY OF McGILL UNIVERSITY.

Fifty-eighth Annual Convocation.

The 58th annual meeting of Convocation took place at 3 P.M., April 1st, 1891, in the William Molson Hall, which was crowded with the relatives and friends of those about to be admitted to the practice of medicine. The Chancellor (Sir Donald Smith) presided, and accompanying him on the dais were Messrs. J. H. R. Molson, W. C. McDonald, and S. Finley, Governors; Sir Wm. Dawson, Principal; Dr. A. Johnson, Rev. Dr. Cornish, Mr. J. R. Dougall, Rev. Dr. Murray, Mr. H. T. Bovey, Mr. J. S. Hall, Dr. Craik, Dr. Rodger, Mr. W. T. Skaife, Dr. Wesley Mills and Dr. McEachran (Fellows), Mr. J. W. Brakenridge (Secretary); Professors Wurtele, G. P. Girdwood, T. G. Roddick, C. E. Moyse, F. J. Shepherd, F. Buller, Jas. Stewart, G. Wilkins, G. H. Chandler, R. L. MacDonnell, D. Coussirat, J. Cox; Drs. Ruttan, Sutherland, Alloway and Birkett, officers of instruction; Rev. Dr. Shaw, Dr. J. H. Fulton, Dr. W. G. Stewart, Dr. L. O. Thayer, Mr. Chas. Fleet, B.C.L., Mr. C. W. Trenholme, B.A Sc., Mr. E. H. Hamilton, B.A.Sc., Mr. F. W. Skaife, B.A.Sc., and Rev. Dr. Adams of Lennoxville.

The Chancellor, in addressing the meeting, said: I consider, and I am sure you will cordially agree with me in the opinion, that I will best discharge the duties of my office on this occasion, this fifty-eighth year of the Medical Faculty of McGill, by being very brief indeed, and it is my intention not to detain you from the proper business of the day beyond a few minutes. You all know what the work of McGill in general has been for these many years back, and you also know that no more important work has been done than that which has fallen to the part of the Medical Faculty. (Applause.) We have been indebted, and very greatly indebted, to the support and to the help of the citizens of Montreal in all branches and in all faculties of the University, whether in Arts, in Science, in Law, in the latest faculty (that of Comparative Medicine and Veterinary Science), or in that with which we have now to deal, and I would wish to say that while in the past, when there were so very little means

of disseminating knowledge and of putting before the people and the world what was being done by scientific men, we have done well, it might be well to formally mention on such occasions as these all that has been achieved by this or that faculty. However, you know equally as well as I do the great work that has been done by McGill, and you know also the great support that has been given by the citizens of Montreal to McGill and its faculties, even to the youngest faculty, which the other day was endowed by a gentleman, not of Canada direct, but from amongst our cousins on the other side of the line, with a very excellent library and a donation of $5,000. Yesterday we had the pleasure of recording our thanks to him. I would wish to say to-day that we do not reserve our gratitude only for favors to come, but McGill feels deeply grateful to all her benefactors, from the first who endowed it, and she will always hold them in her memory. We feel that to my friend on the left here (Mr. W. C. McDonald) we are indeed deeply indebted—(applause) —and we are also under very great obligation to the gentleman who sits by him (Mr. J. H. R. Molson), and to many other benefactors. It would not be desirable, nor would it be seemly, that we should obtrude our wants on all occasions on the people of Montreal. You know what McGill has done and what its wants are. We do not desire always to be calling for more, because we know that it is not necessary, and we know that generous givers do not always desire to be importuned, and we feel that those who desire to give to McGill and who are able to give will do it without much importunity on our part; we leave it to themselves, knowing, as they do, what has been done for this city and the whole Dominion by McGill as an institution of learning. We know that not only they will not allow it to go down, but they will give it the means of progressing and going on side by side with the first institutions of the country. That is our aim, that is our desire, and I am sure you will give to McGill the means of doing so.

The DEAN then announced that the total number of students on the register in the Medical Faculty during the past session was 261, of whom 104 came from Ontario, 83 from Quebec, 29

from New Brunswick, 16 from Nova Scotia, 14 from Prince Edward Isiand, 7 from the United States, 4 from Manitoba, 1 from Newfoundland, 1 from British Columbia, and 2 from the West Indies. He read the list of those who had passed the several examinations of the faculty, as well as those who had won prizes, the latter gentlemen stepping forward as their names were read out and receiving their reward at the hands of the Chancellor. The names of the graduates are :—

Alexander, W. W.....Stanhope, P.E.I.
Beers, A. H.....Montreal, Que.
Bennie, R.....Riverfield, Que.
Berwick, R. H.....Farnham, Que.
Bowie, R. A .....Brockville, Ont.
Brown, W. A.....Chesterville, Ont.
Busby, J.....Pontview, Que.
Calkin, B. H.....Kentvtlle, N.S.
Carlaw, C. M.....Campbellford, Ont.
Clemesha, J. C.....Port Hope, Ont.
Clark, John.....Troy, Ont.
Dewar, A.....Ormond, Ont.
Farwell, W. A.....Lennoxville, Que.
Fletcher, R. W.....Londonderry, N.S.
Gibson, R. J.....Clinton, Ont.
Grafton, E. A.....Montreal, Que.
Hamilton, W. F.....Sackville, N.B.
Harrison, J. D., M.A.....Fredericton, N.B.
Hattie, W. H.....New Glasgow, N.S.
Hayes, J., B.A .....Nelson, N.B.
Hewetson, J.....Riverside, Ont.
Holden, D. B., B.A.....Montreal, Que.
Keir, E. J.....Malpeque, P.E.I.
Kelly, C. I.....West Flamborough, O.
Lambert, E. M.....Ottawa, Ont.
Love, A.....New Glasgow, N.S.
Lovering, W. T.....Seattle, Wash. Terr.
Mader, A. I.....New Canada, N.S.
Main, C. G.....St. Andrews, N.B.
Martin, M. Mc.....Brown's Creek, P.E.I.
Morrow, W. S.....Halifax, N.S.
McMillan, J. H.....Pictou, N.S.
McPhail, J. A., B.A.....Orwell, P.E.I.
McCrimmon, A. A.....St. Thomas, Ont.
Parke, G. H.....Quebec, Que.
Robertson, E. A.....Lennoxville, Que.

Robertson, T. F.....Brockville, Ont.
Shirriff, G. R.....Huntingdon, Que.
Sinclair, O. W.....Bridgetown, N.B.
Sparling, A. J.....Pembroke, Ont.
Spier, J. R.....Lindsay, Ont.
Smith, C. F.....West Winchester, Ont.
Smith, T. H.....North Sidney, C.B.
Troy, W.....Valleyfield, Ont.
Tunstall, C. A.....Montreal, Que.
Watson, N. M.....Williamston, Ont.
Webster, R. E.....Brockville, Ont.
Williamson, W. P.....Chatham, Ont.

The graduates then took the prescribed oath, after which cap and tassel was waved over each by Sir William Dawson, their diplomas were handed them, with the exception of four, who are under age, but who will receive their degree on attaining their majority, and they returned to their seats full-fledged physicians.

Dr. W. Brown delivered the students' valedictory. He spoke of the professors as having been friends and teachers to those attending their classes, was averse to ladies being admitted to study medicine at McGill, referred to the advantages which the students had in hospital work, congratulated Miss Livingstone on the success attending her efforts in connection with the training school for nurses, and suggested the providing of a place in the hospital where the students, when attending their duties there, could obtain some light refreshment at a moderate price, the restaurants in the neighborhood not being all that could be desired.

Prof. Girdwood addressed the graduates on behalf of the Medical Faculty. (*See page* 801.)

Dr. Craik, Dean of the Medical Faculty, then delivered the following address :—Our fifty-eighth session which is now closing, although not in any important sense an eventful one in the history of our Faculty, has nevertheless been marked by some incidents and changes which are deserving of more than a passing notice, and which we trust may be considered not only as evidences of our steady and continued progress as a medical school, but also as earnests of a greater development of usefulness and efficiency in the near future. The number of students in attend-

ance during the winter session, though apparently less by one than during last year, is actually greater by seven, the apparent difference in favor of last year being due to the larger attendance upon the summer session and to the number of students presenting themselves for supplemental examinations. The actual attendance upon the classes, therefore, has shown a larger average than in any year in the history of our Faculty. But not only has the attendance at our lectures and in our laboratories been gratifyingly large, but the harmony and good-will among the students and teachers have been maintained without interruption, and the work of the session has been carried on with a degree of earnestness and dilligence which has borne good fruit in the excellent results of our examinations. But while the results of the session as a whole have given us good cause for congratulation, there have also been some things that have caused us keen regrets. Our distinguished and highly esteemed Professor of Surgery, Dr. Geo. E. Fenwick, has found it necessary, from his advancing years and somewhat failing health, to resign the chair which he has so long held with such marked distinction to himself and benefit to this University. Professor Fenwick's reputation as a surgeon has penetrated to every part of the civilized world, and wherever scientific surgery has been taught his results and his opinions have been quoted as worthy of respect and emulation. His retirement, therefore, from the active duties of teaching cannot but be looked upon as a serious loss to the Faculty, but the position of Emeritus Professor of Surgery, which the Governors have conferred upon him, will enable us to utilize to our great advantage the many years of unofficial work which we hope and trust are still before him, and which his proverbial philanthropy and industry will not allow him to withhold from us. The vacancy created by the retirement of Professor Fenwick from the chair of Surgery has been filled by the appointment of Dr. Thomas G. Roddick to that chair, an appointment which we have every reason to believe is the very best that could have been made in the interests of all connected with the University. The promotion of Dr. Roddick to the chair of Surgery made it necessary to provide him with assistance in his allied

chair of clinical surgery, and this has been done by the appointment of Dr. James Bell as Lecturer on Clinical Surgery, an appointment which has also proved eminently satisfactory. At the commencement of this session, also, the Faculty met with a serious misfortune in the sudden and severe illness of Dr. Ross, Professor of Medicine and Vice-Dean of the Faculty. This made it necessary to make provision for the work of the chair of Medicine until such time as Dr. Ross should be able to resume it, and this was accomplished by his colleague, Professor MacDonnell, of the chair of Clinical Medicine, undertaking a large share of the work, assisted largely by Dr. Stewart, Professor of Therapeutics, and in a lesser degree also by myself. We have now the happiness of seeing Professor Ross again actively at work and rapidly regaining his health, and we hope long to have the benefit of his practical skill as a teacher and his ripe judgment as a counsellor, to the great advantage of his colleagues, of the students, and of the whole community. In the other departments of the Faculty the work has been carried on efficiently and well, measured, of course, by the standards of the past, as well, indeed, as we can hope to do it with our present appliances and resources. If the accepted system of medical education were to continue in the future after the same model as in the past, we would find ourselves in a very enviable position. With a staff of trained and skilful teachers, with laboratories, hospitals and other facilities for efficient teaching, which can scarcely be excelled; with an endowment conferred upon us not many years ago by our generous-hearted Chancellor and other good friends of the University, which seemed at the time to be ample for all our requirements, and with a reputation for thoroughness, built up by eminent and unselfish men after more than half a century of unremunerative work, it might well be asked, What is there that we still need to keep us in the van of medical progress? The question is one that scarcely admits of a definite answer. In conformity with the progressive spirit of the age the whole system of medical teaching has been, and is still, undergoing a profound and radical change. That the change is greatly for the better there can be no manner of doubt, and

on that account it is sincere matter for congratulation ; but, on the other hand, the change has also been in the direction of considerably increased expenditure. Practical teaching and demonstration are year by year and more and more taking the place of mere descriptive teaching, and it can readily be understood that the greater amount of individual attention required necessitates a much larger staff of demonstrators and assistants, as well as more apparatus and laboratory equipment, than the older and simpler methods. Another result of the changed methods of instruction has been the splitting up of several important departments into sub-divisions, which have themselves greatly increased in magnitude, some of them even rivaling in prominence and importance the parent branch from which they sprang. This has been more particularly the case with the allied subjects of physiology, histology, and pathology, All three of these were, not many years ago, included in the single department of Institutes of Medicine, and the teaching of all three was entrusted to one individual. To cover the same ground now in a proper manner and in accordance with modern scientific methods would require at least five teachers or demonstrators and ten times the amount of apparatus and appliances. It does not, of course, follow that the increased expense is in the same ratio, for skilled assistants can often be made to take the place of professors and demonstrators at less expense, but the increase in the individual and personal work, of course, means also additional outlay. Expansions and amplifications of a similar kind, though less in degree, have occurred in many, and indeed in most of the other departments, and while they have added greatly to the efficiency of the teaching, they have also added somewhat to the expenditure. Unfortunately, it has not been possible to meet this increased expenditure by a corresponding increase in the fees charged to students in medicine. When students are selecting the institution at which they are to receive their medical training, or when their friends or parents are making the selection for them, they are not always in a position to estimate correctly the value of the facilities offered by each, and knowing that they are all equal in the eye of the law, they are apt to be

drawn aside towards some of those that will enable them to obtain the necessary license to practice at the least expenditure of money, and this, of course, to the detriment of their future usefulness and of the public to which they are to minister. The greater amount of time and labor required in the practical teaching of such branches as physiology, pathology, and chemistry, not to mention others of equal importance, makes it almost absolutely necessary that the professors of those departments should devote the whole of their time to their teaching functions, and thus debar themselves from that portion of their income which they might otherwise derive from private practice ; indeed it is difficult to see how in a prosperous school the work can be efficiently carried on in any other way. But if the Faculty is thus to demand a skilled professor's undivided services, surely he also is entitled to demand that he shall receive at least reasonable remuneration, and unless this be given him we cannot long expect to command his services. It must be remembered in connection with this part of the subject that in the departments of practical physiology and pathology, as taught in the best of the modern schools, the number of really valuable men who have devoted themselves to this kind of work, and have undergone the necessary preparations for it, is as yet comparatively small and their services are in active demand. Indeed, this Faculty, which was one of the first on this continent to inaugurate the new system, was also one of the first to suffer for it, for scarcely had it started in its new career of teaching physiology according to the most modern method, when its distinguished professor, Dr. Osler, one of its own graduates, was induced to accept a more lucrative position in connection with the University of Pennsylvania. It was fortunate for us that we had in Dr. Wesley Mills one in every way a worthy successor to Dr. Osler, and one who, in addition to a long experience in the art of teaching, brings to bear upon it an enthusiasm and a personal influence which have been of the greatest benefit not only to his own class, but to the Faculty as a whole. But here, again, we have been threatened with the same danger as before. We have, unfortunately, not been able to make the assured income of Dr. Mills

equal to what his value as a teacher should represent, and overtures have recently been made to him also tempting him to leave us and offering him increased remuneration elsewhere. Such recurring dangers have really been a source of much anxiety and discouragement to us, and have caused us to look eagerly around for some means of averting the threatened calamity, and it gives me great pleasure to be able to announce that a promise of very material help in this matter has been made to us from a source which makes it particularly gratifying, being in a manner closely connected with the department of physiology itself. Mr. Walter Drake, of Montreal, being aware of our pressing need, and realizing that, in such circumstances, "he gives twice who gives quickly," has promised, in grateful remembrance of his brother, the late lamented Dr. Joseph M. Drake, formerly a distinguished professor of physiology in this University, to place an annual sum of $500 at the disposal of the Faculty for purposes in connection with the chair of Physiology. This sum is to represent the interest at five per cent. on a capital sum of $10,000, the annual payments of interest to be redeemable at any time within five years by the payment of the capital sum itself. I cannot at present speak further as to Mr. Drake's generous intentions, as the matter has not yet been fully discussed nor laid before the Board of Governors, but those of us who know Mr. Drake best may reasonably hope that, having put his hand to the plough, he will not be likely to look backward until he has placed the chair of physiology upon a secure basis. But serious as have been our anxieties in connection with the chair of physiology, they are even more serious in relation to the department of practical pathology. This department is coming rapidly to the front in the best systems of medical education, and is probably doing more to bring our profession prominently before the public than any of the other departments of medicine, as witness the recent excitement with regard to Professor Koch's experiments in tuberculosis. But although our Faculty has always recognized the supreme importance of establishing the department of practical pathology on a sound and efficient basis, it has not yet been able to accomplish its wishes in this respect,

and the prestige of the school must soon suffer, if it has not already suffered, from this deficiency. I might go on to point out other and pressing needs connected with our Faculty, such as some provision for the early extension of our present buildings, and more particularly the early restoration to our endowment funds of the amount necessarily borrowed from them in 1885 for the same purpose ; but I fear I have already dwelt too long on the depressing subject of our wants and wishes. It is not for me to say how these wants are to be supplied. I feel that I may safely leave that to those true friends of progress who have always come to the relief of our University in its pressing needs, but I should be remiss in my duty if I failed to point out that they are real and pressing wants, and that we ask them to be supplied not to enrich ourselves, but to strenghthen an institution which has done good service in the past, and which hopes to do still better service in the future in the interests not only of the University of which it forms a part, but of the profession with which it is connected and the cause of suffering humanity wherever it may be found.

The following gentlemen have passed their Primary Examination, which comprises the following subjects: Anatomy, Practical Anatomy, Chemistry, Practical Chemistry, Physiology, Histology, and Botany :—

Aylen, E. D.	Aylmer, Que.
Blunt, H. V.	West Bolton, Que.
Bostwick, W. E.	Montreal, Que.
Brown, J. A.	Sarnia, Ontario.
Coburn, A. D.	Keswick Ridge, N. B.
Cameron J. D.	L'Orignal, Ont.
Deeks, W. E., B. A.	Williamsburg, Ont.
Dewar, A. T.	Kertch, Ont.
Dewar, G. F.	New Peril, P. E. I.
Du Vernet, E.	Gagetown, N. B.
Fleming, G. W.	Chipman, N. B.
Fulton, J. A.	Franklin Centre, Que.
Girdlestone, C. W.	Winnipeg, Man.
Goff, H. N.	Newport, P. E. I.
Gunter, F. B.	Fredericton, N. B.
Henderson, J. A.	Orangeville, Ont.
Hewetson, S. W.	Georgetown, Ont.
Holden, D. B.	Montreal, Que.
Jamieson, W. H.	Montreal, Que.
Lawrence, J. W.	Lower Dumfries, N. B.
Lindsay, W.	St. Marys', Ont.
Livingstone, H. A.	Montreal, Que.
Martin, S. H.	Savage Mines, Que.

Mackay, R. B., B.A.....Toronto, Ont.
Mackenzie, S. R .....Montreal, Que.
McArthur, A. D.....Kenmore, Ont.
McCann, A. E. A.....Montreal, Que.
McLennan, K.....Dunvegan, Ont.
McMillan, W.....Alberry Plains, P.E.I.
McMorine, R. F. .....Richmond, Que.
McPhail, J. A., B.A .....Orwell, P. E. I.
Patterson, W.....New Glasgow, N. S.
Rorke, R. F.....St. Thomas, Ont.
Semple, E. J .....Montreal, Que.
Seguin, J. W. A.....Rigaud, Que.
Scane, J. W.....Chatham, Ont.
Shaw, G. F .....Ottawa, Ont.
Shaw, T. P.....Montreal. Que.
Smith, T. H.....North Sidney, N. S.
Tomkins, J. E. C.....Coaticook, Que.
Walker, J. L. .....Montreal. Que.
Walsh, T. N. .....
Watson, N. M.....Williamstown, Ont.
Wilson, R.....Montreal, Que.
Wilson, R. D.....Derby, N. B.
Yearwood, C., B.A. .....Barbados, W. Indies.

MEDALS, PRIZES AND HONORS.

The Holmes Gold Medal for the best examinations in all the Branches comprised in the Medical Curriculum is awarded to William Arthur Brown, of Chesterville, Ont.

The prize for the best examination in the Final Branches is awarded to William Fawcett Hamilton, of Sackville, N.B.

The prize for the best examination in the Primary Branches is awarded to William Edgar Deeks, of Williamsburg, Ont.

The Clemesha Prize in Clinical Therapeutics is awarded to William Stairs Morrow, of Halifax, N.S.

The Sutherland Gold Medal is awarded to John Alexander Henderson.

The following, arranged in order of merit, deserve honorable mention :

In the Primary Branches—J. A. Henderson, R. B. Mackay, C. Yearwood, K. McLennan, J. W. Scane, A. T. Dewar, W. Patterson, E. D. Aylen, Robt. Wilson, J. D. Cameron, R. F. Yorke, W. E. Bostwick, and A. D. McArthur.

In the Final Branches—W. H. Hattie, W. S. Morrow, R. A. Bowie, J. C. Clemesha, J. Hewetson, Wm. Troy, J. Busby, A. Dewar, E. A. Robertson, E. A. Grafton, T. F. Robertson, J. R. Spier, C. F. Smith, C. I. Kelly.

Professor's and Demonstrator's Prizes—Botany, Allan Davidson; Senior Anatomy, John Alexander Henderson ; Junior Anatomy, Andrew Armour Robertson ; Clinical Chemistry, Benjamin Furlong Boyce.

Medical Items.

—Drs. E. A. Robertson and W. A. Farwell have been appointed Resident Medical Officers to the Montreal Maternity for the ensuing year.

—Drs. Hamilton, Morrow, Spier, Grafton and Tatley have been appointed Resident Medical Officers to the Montreal General Hospital for the ensuing year.

—Any qualified practitioner desirous of succeeding to a lucrative practice in one of the most flourishing cities of the North-West, can obtain particulars by applying to the Editors of this JOURNAL.

—The J. B. Lippincott Company of Philadelphia announce that during the present month they will issue the first number of a quarterly periodical to be known as "International Clinics." This work will comprise clinical lectures on general medicine, surgery, and the different specialties delivered in the leading medical schools of the United States, Great Britain and Canada. The object is to furnish the busy practitioner and medical student with the most advanced and practical clinical thoughts of the day. Each volume will consist of over 350 octavo pages, illustrated with photographic reproductions of important cases.

COMPULSORY LATIN.—To the controversy as to the continuance of Greek as a compulsory subject at the Universities, raised by Mr. Welldon's paper at the Head Masters' Conference, Prof. J. Stuart Blackie has contributed a remarkable letter, published by the *Times* on January 21st—remarkable in itself, and still more remarkable as coming from one whose great reputation was made as a teacher of Greek. As to the necessity for learning Greek in order to obtain a reasonable standard of culture, Prof. Blackie employs a most pungent argument. "The Greeks," he writes, "learned no language but their mother tongue, and were nothing the less the wisest people in the ancient world and the teachers of wisdom to all generations." But he goes a good deal further than the head masters of Harrow and of Rugby; he calls in question the supreme

value of Latin as an element in education. Two or three centuries ago Latin was the key to storehouses of knowledge not otherwise accessible; but "it is not so now. The most rich and various storehouses of all sorts of knowledge, both speculative and practical, are open to a modern British man without any key but his mother tongue; and an Englishman or a Scot, in the latter end of this nineteenth century, three hundred years after Shakespeare, has no more need of going to dead languages for the sake of the culture that belongs to a well-educated gentleman than a Newcastle man has to send to the end of the world for coals which he has at his own door. . . . . What was once an anomalous necessity has now become an absurd anachronism, a scholastic tradition." Prof. Blackie is for requiring from the candidate for an ordinary pass degree in arts—as to medicine he appears to reserve his opinion—a familiar knowledge of some one foreign tongue, ancient or modern, for he writes: "Even on the supposition that linguistic training is the very best possible for a youth of good promise in this nineteenth century, it is quite certain that German is as good for this purpose as either Latin or Greek, with this immense advantage—that the language of Goethe and Bismark, if once learned, will likely be used, while in the case of Greek and Latin, it seems an undeniable fact that nineteen out of twenty British youths who have gone through the traditional routine of a classical education forget easily in three months all that they have painfully acquired in as many years." Dr. Wade, in his presidential address to the Association at Birmingham, was thought by many to have been overbold when he maintained that the question whether Latin should be retained as a compulsory subject in the curriculum of medical students was one which might be debated; it was said that his action would tend to hasten the fulfilment of the prophecy that within a few generations medicine would cease to be a liberal profession. But he found a powerful ally in Prof. Huxley, and now it would seem that Prof. Blackie is prepared to back Prof. Huxley; and if these two representative men are not men of culture, some new definition of that much abused phrase must be devised.—*British Med. Journal.*

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Original Communications.

RETROVERSION AND RETROFLEXION OF THE UTERUS.*

BY CLINTON CUSHING, M.D.,
Professor of Gynæcology, Cooper Medical College, San Francisco.

In preparing a paper for this Society on some subject within the domain of gynæcology, it has seemed to me that a subject should be selected which should have, as far as possible, relation to the every-day work of the practitioner. The question of backward displacements of the uterus has been so thoroughly discussed in the books, in the societies, and in the medical newspapers, that it would seem that there is little that is new or novel to be brought forward. Nevertheless, the daily experience of anyone whose time is much occupied in the consideration and treatment of special maladies is almost sure to develop practical and successful methods of treatment, the relation of which is likely to prove of interest to the general practitioner.

Before proceeding to the discussion of individual experience and opinion, it may prove profitable to say a few words concerning the anatomy of the pelvic organs; and first, as to the much vexed question as to what forces are potent in retaining the uterus in its natural position, or perhaps we might ask, What is the natural position of the uterus? In the case of an organ so movable as the uterus, attached as it is by elastic and movable supports to the surrounding parts, changing its position with every movement of the diaphragm and of the patient's body, it

* Read before California State Medical Society, April 22nd, 1891.

is not strange that writers on this subject so frequently disagree as to what the normal position should be. In the first place, it should be remembered that no two women are exactly alike in this part of their body any more than that their faces are exactly alike. One woman has a long and narrow vagina with the uterus very high in the pelvis; another woman has a very short and broad vagina with the uterus very low in the pelvis. One woman with a large bladder fully distended with water will have the fundus of the uterus pushed over toward the sacrum, and very far forward near the pubic bone when the bladder is empty.

The connective tissue which attaches the uterus to the bladder, as well as the connective tissue of the broad ligament, undergoes, under certain circumstances, such as intra-abdominal pressure from muscular exertion, an amount of distensibility which permits a very great degree of motion to this organ.

Notwithstanding these statements, there seems to be one general proposition which can be safely agreed upon by all,—that where the bladder is entirely empty and contracted the fundus of the uterus should be in rather close apposition to the top of the contracted bladder, and the pressure of the small intestines should be behind the uterus instead of in front of it; in other words, in a condition that some writers would have us believe is one of anteversion, a condition which, in my opinion, is not a pathological one. For years I have been looking for a case where the symptoms and position of the uterus would warrant the belief that an anteversion of the uterus was the cause of suffering. Thus far I have been unable to find one.

Now as to the forces which retain the uterus in its normal position. The utero-sacral ligaments, attached as they are to the junction of the body and the neck of the uterus and passing almost directly upwards, one on either side of the rectum, to the anterior surface of the sacrum, are doubtless the principal elements in keeping the uterus in its normal position. So long as the neck and lower portion of the body are kept drawn upwards and backwards by these ligaments the fundus of the uterus tends to fall forward, and so the intra-abdominal pressure is exerted against the posterior wall and thus tends to keep the uterus

crowded forward into a state of so-called anteversion. The round ligaments, acting as guys, probably tend also to keep the fundus of the uterus forward, but their force is small compared with that exerted by the utero-sacral ligaments.

As far as downward or backward displacements of the uterus are concerned, the broad ligament seems to exert very little influence. The normal condition of the perineal body and the pelvic floor, I am convinced, exercise considerable influence in keeping the uterus in its normal position. If the perineal body and the pelvic floor have been over-stretched and torn to a sufficient degree to allow a prolapse of the vaginal walls through the vaginal opening, the dislocation downwards of the bladder and the pelvic organs generally tends to place the uterus lower in the pelvic excavation, and the uterus, following the curve of the pelvis, tends gradually to become displaced downwards and backwards. This is especially true in women during the first few weeks following child-birth, when the connective tissues and the ligaments are left in a relaxed and over-stretched condition, and the uterus is large and heavy ; and I am sure that many women date their uncomfortable pelvic symptoms, due to a retroversion of the uterus, to their first confinement.

The moment that the uterus becomes displaced downwards to a point where the pressure of the small intestines gets in front of instead of behind the body, a backward displacement is inevitable. I can easily understand how the combination of the wearing of tight corsets and the habitual over-distension of the bladder, occurring in the same woman at the same time, would be a very decided cause of displacements of the uterus backwards.

That backward displacements of the uterus may be congenital is well known. Soudry, in seventy-one post-mortem examinations of infants, found the uterus retroverted in fifteen cases and retroflexed in two cases ; and I have so frequently found retroflexion and retroversion of the uterus in young girls who were suffering from dysmenorrhœa that I doubt not that a considerable proportion of all women have congenital retroversion or retroflexion of the uterus.

If the uterus becomes enlarged from any cause, and by its

weight settles down in the pelvis much below its usual position, it is easy to understand how a retroversion would eventually follow. It is claimed that peritonitis and metritis are causes of backward displacements of the uterus. My experience does not warrant this opinion.

There is no doubt that tight-bandaging following confinement should be considered as a cause of retroversion, by crowding the enlarged uterus with its relaxed ligaments downwards and backwards into the pelvis. It is claimed by some observers that a backward displacement of the uterus is not of sufficient pathological importance to justify effort to correct it. It is true that I occasionally see a case of backward displacement of the uterus where no disagreeable symptoms prevail, but this is certainly a very rare exception. The symptoms, in some degree, of painful menstruation, of back-ache, of irritable bladder, of inability to stand or walk with comfort or ease, of constipation, of reflex nervous symptoms, either of the stomach or the head, one or all, sooner or later force the patient to apply to the physician for relief; and the very marked mitigation of the troublesome symptoms following the successful treatment of these cases proves past all argument the truth of the proposition that all backward displacements of the uterus, attended with local or general symptoms, should have the displacement corrected.

The cases that seem to show the least evil effect in backward displacements of the uterus, are women where the change of life has occurred. Here we may have a markedly displaced and atrophied uterus with no attending local or general symptoms.

The common causes of backward displacements of the uterus are, first, anything which weakens its supports. Thus the ligaments, in common with all the other structures of the body, may become weakened from any exhausting sickness. They are left relaxed following confinement, or the perineum, from being overstretched or torn so that a part of the support of the vagina and bladder from below is removed. Secondly, any intra- or extra-abdominal pressure exercised from above, whether from tight corsets or heavy skirts, or unusual muscular exercise, or the growth of some form of abdominal tumor. Any one of these

causes, acting upon a uterus whose ligaments are weakened or relaxed, is liable to end in displacement downwards or backwards.

A chronic enlargement of the uterus is doubtless an additional element in the causation, if the two causes already mentioned are already in operation; but simple enlargement of the uterus, without the other causes being in operation, is probably very seldom the cause of displacement.

Habitual over-distension of the bladder should be considered as a cause of retroversion.

There are certain pathological conditions that are nearly universally present in all long-standing cases of backward displacement of the uterus: first, an enlargement of the body; second, endometritis. The symptoms vary greatly. There is usually increased muco-purulent discharge from the cervix, more or less backache in the region of the sacrum. Troublesome constipation is a common symptom, and an irritable condition of the bladder frequently prevails. Reflex symptoms, such as pain under the left breast, functional disturbance of the stomach, troublesome headaches and pain down the thighs occur in varying degrees in the larger proportion of these cases, and I know of no treatment, medical or otherwise, that is of any avail in the relief of these symptoms excepting the correction of the displacement.

The diagnosis in these cases seems to me to be so easy that a mistake should seldom be made, if the well-known methods of examination are carefully followed out; that is, the bi-manual examination without any constriction of the waist, and, if necessary, the use of the uterine sound.

The prognosis as to relief is generally good. The prognosis as to cure is uncertain, if by the term "cure" we mean that the uterus shall retain its normal position after all supports and appliances have been removed.

The foregoing is simply a preliminary to the more practical questions of how best to treat these cases; and first as to the method of re-position. So much depends upon the existing state of the parts immediately surrounding the uterus, independently of the fact of displacement, that it will be necessary to dilate

somewhat upon what would appear to me to be some very important propositions.

In the first place, if the abdominal wall is relaxed and thin, and the uterus freely movable and not sensitive to touch, and there is no constriction of the woman's waist, with the woman lying upon her back with the shoulders raised and the knees well drawn up, it is usually an easy matter, by introducing two fingers into the vagina and crowding the fundus well upwards with the left hand, to push, with the ends of the fingers of the right hand, the abdominal wall down into the pelvic excavation so that the fingers in Douglas' pouch and the ends of the fingers on the surface of the abdomen will meet just below the promontory of the sacrum. And now one of the fingers in the vagina is placed in front of the cervix, and as the cervix is pushed backwards the body of the womb is drawn over forwards and crowded over upon the bladder with the fingers of the right hand, which are on the surface of the abdomen.

This procedure is exceedingly easy after a little practice in appropriate cases; and this statement applies either to a retroversion or a retroflexion.

If the uterus is somewhat enlarged and not freely movable, or the abdominal wall is rigid or loaded with fat, this last mentioned procedure is not practicable; and especially is this true if, as a result of former attacks of pelvic inflammation, adhesions exist between the uterus and the rectum and surrounding structures. Here the most feasible plan is to place the woman on a table on her elbows and knees, have all constrictions removed from the waist, introduce the Sims speculum into the vagina, and have it held by an assistant. Now with a small vulsellum seize the cervix by the anterior lip and draw the uterus well down into the vagina. Now take a stiff copper sound—or what I very commonly use is a No. 8 steel urethral sound—and pass it gently into the reflexed or retroverted uterus. Now turn the sound very gently and carefully so as to place its concavity forwards instead of backwards, and then gradually draw the uterus over into its normal position, the amount of force required governing you as to the extent of the replacement which you shall effect.

If the adhesions between the rectum and the body of the uterus are very firm and of long standing, this procedure, however thoroughly done, will not suffice. No kind of treatment of this form or description will be of any avail. The reason for this opinion I will give presently.

If, however, the adhesions are not very firm they can be broken up in this way, and the uterus can be retained in its normal position successfully and with relief to the symptoms.

As the sound is withdrawn from the now properly replaced uterus, the cervix, which is still held by the vulsellum, is crowded backwards toward the sacrum. This tends still further to force the body of the uterus farther over toward the pubes.

Now, several pieces of absorbent cotton the size of a hen's egg, to which are attached pieces of strong thread, are saturated with glycerine and are crowded up into the post-cervical pouch, and the lower part of the vagina is now filled with a half dozen pieces of common cotton batting, also with threads attached, and the woman is allowed to lie upon a sofa or bed for half an hour or an hour before attempting to stand upon her feet.

Unless the woman suffers from unusual pain, this vaginal dressing is allowed to remain *in situ* for forty-eight hours, when the woman removes it and takes a large vaginal injection of hot water. If, however, the pain is very severe, the vaginal tampons should be removed at any time and a large vaginal injection of hot water used at once.

The effect of the glycerine, on account of its affinity for the water in the tissues, acts as a leech in taking from the tissues their water, which runs away from the vagina in large quantities for the first twenty-four hours after the dressing is applied. The The non-absorbent cotton acts as a support to the uterus and the surrounding tissues, and the congestion of all the surrounding parts is much relieved as a consequence of the treatment.

This plan of procedure should be repeated every three or four days until the uterus goes over into its position with ease and without marked pain. And then the question will come up of the application of some permanent vaginal support which the woman can wear for months, to keep the organ in its proper position.

Many writers tell us that the sound should not be used in this manner; that its use is attended with danger; that it sets up pelvic peritonitis and cellulitis, and thereby endangers the life of the woman. In a large experience at the clinic for women at the Cooper Medical College in San Francisco, as well as in my practice, I have used this method extensively for the past ten years, and in that time, out of many hundreds of cases, pelvic inflammation has followed in not more than three or four instances.

Now I would like to call attention especially to the conditions where the use of the sound is unwarrantable, or is likely to be followed by evil results. Where there is a history of acute or subacute pelvic inflammation, or where there has been a history of recurring attacks of pelvic peritonitis, or where there is a recent effusion of lymph, or firm fixation of the uterus with marked tenderness, the sound should never be introduced into the uterus. If it is, there can be but one result—an aggravation of all the symptoms; and the reason why the introduction of the sound in these cases so surely sets up a new inflammation, and the reason why the topical application of remedies to the cervix, or an examination of any kind with an instrument, or even with the finger, in some instances is followed by an acute inflammation of the pelvic peritoneum, is now comparatively easy of explanation. What was to me a mystery in days gone by, before our knowledge of this department of medicine became very accurate, is now as plain as that two and two make four.

I am sure that I am within bounds when I say that nine out of every ten cases of pelvic inflammation are due to the extension of disease from the Fallopian tubes into the pelvic cavity. This is the reason why pelvic peritonitis is almost unknown among men and is so exceedingly common among women. If a woman has pus or muco-purulent secretion in the Fallopian tube, in certain cases it is only necessary that a contraction of the uterus and of the walls of the tube be set up by the use of a sound, or some local application, or perhaps even by digital examination, and that some of the secretion be forced out of the open end of the tube into the peritoneal cavity, and forthwith a pelvic peri-

tonitis ensues. This, then, is the explanation in nearly all cases of pelvic peritonitis following the introduction of a sound into the uterus.

I take it for granted that all intelligent medical men at the present day use only sounds and instruments that are absolutely clean and free from infection. It would seem, then, from what has been said, that the degree of safety with which the sound can be used depends upon the ability of the operator to diagnose correctly the existence of pyosalpinx and salpingitis.

Where the tubes are enlarged or tender to the touch, where there is a history of recurring attacks of pelvic inflammation, the greatest gentleness should be used, and the free use of the tincture of iodine to the vaginal vault and the frequent use of vaginal tampons of glycerine and cotton, with large injections of hot water, should precede any effort at instrumental replacement of the uterus.

In other words, the tenderness about the uterus should be reduced as the very first step, and all instrumentation of whatever nature should cease immediately if the inflammatory symptoms are in any way aggravated ; and I think it will invariably be found that any case of subacute pelvic inflammation that is made worse by a properly applied tampon of glycerine and cotton will prove to be a case of pyosalpinx, and that this opinion will be verified by the subsequent history of the case.

Where it can be conclusively shown that pyosalpinx exists, the proper treatment is to open the abdomen, remove the diseased tubes, draw the retroverted uterus forward and stitch it to the anterior abdominal wall with two sutures of silk-worm gut. This I have done frequently during the past two years, and thus far have been much pleased with the result.

I have already stated that where the adhesions from pelvic peritonitis, between the posterior wall of the uterus and the rectum, were very firm they could not be broken up by drawing the uterus well forward with the steel sound. I have repeatedly opened the abdomen in such cases, and have found the adhesions so firm that it was with the greatest difficulty they could be dissected off with the finger-nails so as to free the uterus sufficiently

to allow it to be brought into its normal position. In such cases it is folly to expect, by any kind of force brought to bear from the inside of the uterus, we shall be able to loosen such adhesions.

In using any kind of vaginal pessary for the correction of backward displacements of the uterus there are several important conditions which should be carefully considered. In the first place, the fundus of the uterus should be placed so far forward that with the ends of the fingers of one hand upon the abdominal wall and with two fingers of the other hand in the vagina, if the cervix is crowded well backwards the body of the uterus should be pushed easily forwards, so that there can be no question but what the organ is placed in a condition of so-called anteversion. This I consider indispensable before any attempt is made in fitting a vaginal pessary. Secondly, the tissues surrounding Douglas' pouch, notably the utero-sacral ligaments, must be practically free from tenderness. If these two points are carefully attended to, success will probably attend the use of a properly fitting vaginal pessary.

Now, what constitutes a well-fitting vaginal pessary in backward displacements of the uterus? The Hodge pessary, or some modification of it, is the only instrument which will be considered in this connection. I have long since given up every other kind of pessary. Instruments with an external support are attended with so many difficulties that they have not proved feasible in my hands.

One of the best tests of a properly fitting instrument is that the patient is not aware from her sensations that she is wearing a pessary. There should be an absence of any sensation in the vagina of the existence there of a foreign body, and no instrument can be worn with benefit to the woman if it cause any pain whatever. This I make an invariable rule, that if a woman is wearing a vaginal pessary which causes pain or discomfort that is not relieved by a vaginal injection of hot water or by lying down for an hour, she is ordered to remove the instrument at once, as it is sure to do harm rather than good. The length, the breadth, and the curves of the instrument must be adapted to the individual case.

It is impossible to lay down any fixed rules regarding the fitting of pessaries, except, perhaps, the one that they must not cause pain, and that they shall retain the uterus in its normal position. The instrument should be sufficiently loose in the vagina to permit of the introduction of the finger by the side of the pessary without much force, and the pushing of the pessary upwards and backwards with a moderate amount of force should not cause pain. I frequently find it necssary to change the size and form of a pessary several times during the first week before success is achieved.

It is as reasonable to expect a dealer in shoes to have his eyes blindfolded and then, after examining his customer's foot with his hands, to have him go to an adjoining room and, after removing the bandage from his eyes, select from his stock of goods a pair of shoes that will be a satisfactory fit without ever having seen the foot of the purchaser, as it is to expect the physician to make a perfect fit of a pessary in the vagina before having made a digital examination. In fact it is much more difficult than the fitting of the shoe, because in the case of the uterus you have a movable organ attached to elastic and movable supports, and the physician must carry in his mind's eye the length, the width and the relations of the parts, as well as the points of tenderness in the tissues about the roof of, but outside, the vagina. No man may hope to succeed in the management of these cases unless he be possessed of patience, gentleness and a fair share of mechanical skill; and the elements which enter into the composition of cases of retroflexion and retroversion of the uterus are so diverse that personal experience in the management of them is a not unimportant factor.

To realize the difficulty attending the successful management of some of these cases, I have only to say that while I have in my office from three to four hundred pessaries to select from, I am often unable to find in all this stock an instrument that will fit a certain case, and am therefore forced to remodel a pessary before I can succeed. This statement should certainly give courage to those who have a smaller stock of instruments and a smaller experience, when they are unsuccessful on first or second trial.

The question will often be asked, How long it will be necessary to wear the pessary ? There can be but one answer given : that it must be worn as long as it gives comfort and relief, and can be permanently removed only when its removal is not followed by subsequent pain or discomfort.

The argument that it is an artificial appliance, and that it does not cure, has little force, for we see many people about us every day who are using or wearing some artificial appliance in order that their life may be made more comfortable or tolerable. False teeth, spectacles, trusses for hernia, wooden legs, ear-trumpets, glass eyes, are all artificial appliances that are intended, not to cure, but to give the individual comfort.

The patient should be instructed to be little upon her feet for the first forty-eight hours after the introduction of a pessary.

In retroflexion, I have found that in a considerable proportion of cases the body of the uterus curls backward over the upper cross-bar of the pessary, and that all efforts to correct this displacement and deformity fail until after the introduction of the stem pessary into the cavity of the uterus. This prevents the flexion, and now the retroversion pessary keeps the uterus in its proper position without difficulty. I have used the stem pessary in this manner many times with the most satisfactory results.

Usually I have found it necessary for the patient to wear the stem about a month. Thereafter the uterus retains its normal position without further trouble if the patient continues to wear a properly fitting retroversion pessary.

It is true that I occasionally see a case of retroversion of the uterus remain permanently cured after the pessary has been worn for several years, but this is certainly the exception to the rule.

There is an impression that is quite general in the public mind, and it is shared to some degree by the profession, that backward displacements of the uterus are cured by child-bearing. This is not true, but, on the contrary, a retroversion or retroflexion of the uterus is made worse than better by this process, and I never have known a case where this condition was in any way benefitted by pregnancy and parturition.

Experiments have been made of late years by shortening the round ligaments, by opening the abdomen and stitching the fundus of the uterus to the anterior abdominal wall, and various other methods of ventral fixation, to cure permanently backward displacements of the uterus. Some or all of these plans have proved moderately successful in women who do not subsequently become pregnant, but it must be manifest to all that if the uterus is fixed anteriorly by any such methods, if she should become pregnant the uterus, as it enlarges, will break away from any artificial adhesions of this kind long before the end of the pregnancy.

My own experience in these cases is confined to ventral fixation of the uterus in cases where the ovaries and Fallopian tubes have been removed on account of extensive disease, and where the uterus is retroverted and bound down by adhesions. In several cases of this kind, after the removal of the tubes and ovaries I have stitched the fundus of the uterus to the anterior abdominal wall with silk-worm gut, and thus far have been satisfied with the results. No untoward symptoms have followed, and the uterus in nearly all instances has remained in the position in which I left it, so far as I have been able to ascertain, and the effect upon the health and comfort of the woman has been most satisfactory.

I herewith append a list of the printed instructions which I furnish to every patient in whom a vaginal pessary is fitted:

1. Remember that to obtain the best results the following instructions must be observed.

2. If the pessary you are now wearing causes you pain, use an injection of hot water in the vagina and lie down for a few hours. If this does not relieve the pain, remove the pessary at once; pass your finger into the ring, which you can feel, and draw the pessary away. You can do yourself no harm in removing it.

3. Use a vaginal injection of hot water every night and morning while wearing the pessary.

4. Never allow more than a month to pass without being examined by a physician, while you are wearing the pessary.

5. Do not wear tight or heavy clothing about the waist; and do not wear tight corsets.

6. Keep the bowels regular; have a movement of the bowels at least once a day.

7. Avoid as much as possible going up stairs, using the sewing machine, lifting heavy weights, or riding over rough roads.

8. If possible, lie down an hour in the middle of the day, and keep very quiet during menstrual periods.

ELEVATION OF THE PELVIS AS A MEANS OF RELIEVING VOMITING OF PREGNANCY.

By Sir James Grant, M.D.,
Consulting Physician General Hospital, Ottawa, &c.

In 1877 I was called to attend a lady in her first pregnancy, about the third month of utero-gestation. I learned that for fully ten days she had been unable to take food, and with great difficulty retained even the smallest quantity of liquid nourishment. Almost every form of treatment had been tried without any apparent good result. As a last expedient, I decided to test the effect of elevation of the pelvis, which was accomplished by lowering the head and thorax, and placing several pillows under the sacrum. In a short time the change for the better was encouraging, and continuing the position at intervals for a few hours, in two days the marked improvement in the system was quite evident, and utero-gestation proceeded to the full term without any return of this abnormal condition.

Within the past month, two cases of severe vomiting in early pregnancy came under observation, in both of which I adopted the same treatment, with equally satisfactory results.

Guémot, referring to the rational treatment of vomiting during pregnancy, says that a morbid or abnormal state of the uterus, the nervous system, as the carrier of reflex action, and the stomach, are the prime factors in the malady. The idea of Smellie's, that the complaint is "chiefly occasioned by fulness of the vessels of the uterus," certainly is most rational. The elevation of the pelvis gradually lessens the quantity and force of the blood in the uterine vessels, and thus reduces the quasi-irritability, or, as Dr. James Stewart of McGill terms it, "the

instability of the nerve elements" in the uterine nervous system, the abnormal influence of which, prior to the change of the pelvic position, had been rapidly telegraphed to the spinal and gastric nervous centres.

VIVISECTION.*

By J. A. Macphail, B.A., M.D.

There are questions of science and questions of sentiment, but there are questions in which both are combined. To this last class Vivisection belongs, and the present aim is to establish the proper relation existing between these two factors. Much work has been done on this subject at different times, and evidence has been adduced on both sides by the staunchest opponents, at least the evidence was recorded, but no systematic attempt has been made at a summing up from which any plain unprejudiced mind could draw an authoritative conclusion. All that now remains is to consider the evidence offered along with the facts that have arisen since that time, and to point out on which side, according to all reasonable rules, the decision must lie.

The store of published facts concerning Vivisection in America is singularly small, because in this country it has never really become a public question, but in England, on the occasion of the first attempt at restrictive legislation fifteen years ago, the conflict between those who favored the practice and those who opposed it was singularly keen.

There are two classes of persons working to lessen pain: those who oppose vivisection, striving to prevent the sufferings of animals, and the vivisectors whose motive is the seeking after truth and knowledge, which will go toward alleviating the sufferings of humanity, and of the animals themselves through scientific medicine or applied physiology. That these two classes, who have a common aim, should hold views so conflicting must be due to some misapprehension, which it is intended the present exposition of facts will help to remove.

If it can be shown that the pain and death which vivisection implies have been wrought for the good of humanity, by leading to knowledge light and power, and that this knowledge,

* From the manuscript of an essay awarded the prize of $250 by the American Humane Education Society, with Emendations by the Author.

light and power could have been arrived at in no other way, and that these are so considerable that mankind would be badly off without them, then the case for Vivisection may be considered proved. But if, on the other hand, it is clear that Vivisection is practised indiscriminately with no object in view but to satisfy an idle curiosity, that suffering is inflicted out of proportion to the benefits received, that it is not a useful means of obtaining information which is procurable in some other way, and is essentially bound up with cruelty, then grounds may be said to exist for its limitation, or even its actual suppression. What restrictions, if any, should be laid upon the practice are to be considered afterwards.

By Vivisection is to be understood the operating with cutting instruments or other means on the bodies of living animals.

The objections advanced against it are mainly two—the cruelty involved, and the consequent injury to the moral nature through the infliction of a wrong; but it is also urged that the practice is not justified by the results. It will first be necessary to estimate the amount of pain actually caused, for it is in this the principal fallacy lies.

In the transition from life to death there are three stages: the first marked by loss of consciousness, the second cessation of breathing and heart action, and the third is initiated by those changes that characterize the rigidity of final death and decomposition. An animal may have life and not be "living," that is, it may be alive but unconscious and without the capacity for suffering pain. The animal lies perfectly quiet and appears dead; it can be pricked or cut in the most sensitive parts and give no signs of pain. The only functions that remain are breathing and heart beating; all consciousness is asleep, and these two mechanical operations alone are unsuspended. It is under these conditions, induced by anæsthetics, that most vivisection is performed. The heart may be in full working order, the respiratory movements unimpeded for hours after consciousness has disappeared, and in the case of cold-blooded animals even for days. Operations performed on such an animal are rightly classed under the head of Vivisection, but to brand them as improper is as unreasonable as to charge the skilful surgeon with cruelty who uses all care in removing a tumour from a living but unconscious patient. By

the use of those anæsthetics which physiologists habitually employ the animal is rendered unconscious. This is the moment the Vivisector chooses for his work. He brings into use the instruments of his research. He watches the ebb and flow of blood, the throbbing of vessels, and takes tracings of them; he measures their force; he gathers the juice a gland secretes; he divides one nerve and stimulates another, or poisons a third. He records his observations and finishes a painless but profitable death in one of a variety of ways. Just as anæsthetics have rendered the surgeon's task a simple one and enlarged his sphere, so they have rendered new experiments possible, and have become as great a necessity in physiology as in surgery.

Dr. Yeo submitted the following estimate as to the proportion of operations that caused pain:—

Absolutely painless	75
As painful as vaccination	20
As painful as the healing of a wound	4
As painful as a surgical operation	1
	100

This is on the assumption that the capacity an animal has for suffering is equal to that possessed by a human being. As a matter of fact, the cases in which anæsthetics interfere with the progress of an experiment are exceedingly rare except in certain researches on the functions of sensory nerves, but these functions have already been worked out, and as it now stands the percentage where pain is an essential factor is very low. The public mind has been befogged by the use of a single term vivisection for two separate things: experiments upon sentient and non-sentient animals. It would be easy one would think to distinguish between these two, yet Miss Cobbe, speaking for all opponents of vivisection, says:—"We find it practically impossible to separate torturing from non-torturing vivisection," and Mr. Bergh implores pardon for saying "that if the rose would smell as sweet by any other name, surely the blood of tortured animals would also retain its repulsive odor under any other designation."

The question whether vivisection is good or bad is not affected by saying that there are other things equally wrong,

the agonies caused by sportsmen to birds dragging their wounded bodies to some hidden covert, the piercing cries of the hunted hare, the suffering of the brave fox as his living body is to be torn by the pursuing hounds, or that the pain caused by vivisection ever since it was practised is as nothing compared with the suffering animals undergo in transportation and in slaughter houses for the satisfaction of man's bodily needs, or to assert that in every agricultural community vivisection is being performed constantly for no purpose but to increase the power of man over male animals and to make the noblest of these beasts of burden more easily answerable to his guidance, or to show that the ghastly scenes anti-vivisectionists conjure up from physiological laboratories with their "torture troughs," represent no such cruelty as is depicted in Snyder's "Boar Hunt" or in Landseer's "Death of the Otter." It is also useless to point out that the most earnest vivisector may be an ardent lover of animals, and that his deepest endeavor is to alleviate their suffering in common with that of mankind, or to affirm that their opponents are actuated by an unmanly sentimentalism.

First, there is the principle that should govern man's conduct in relation to animals. Without swearing to the words of any teacher, or committing one's self to any school, it may be laid down as a truth that life is a struggle, a struggle with fellowmen, with living beings, animals and plants, and with the lifeless forces around us. The conditions in which men find themselves inevitably lay upon them this burden, and they are obliged to use the means they find around them in this struggle, amongst which are the lives of animals. If then man is to prosper he must kill animals, it may be tigers, sheep or vermin. It is a duty imposed upon him by nature, even if a painful duty, but self-preservation demands it. The rule cannot be laid down that an animal may be killed for one purpose and not for another, that life may be taken to gratify an appetite or nourish the body, but not to increase the existing store of knowledge or benefit the mind.

The only test is whether the death of an animal is likely to be of benefit to society at large. Man must be fed; he is justified in killing and eating sheep; man's success in this struggle for existence depends on superior knowledge; he is

justified in killing a frog or rabbit if it can be shown that human knowledge is thereby enlarged. But he is not justified in causing pain if it can be avoided, or unless pain is of advantage to him. Death is painful in itself, but that does not mean he is to abstain from killing; it means that he is to kill with the least possible pain. One could imagine a costly system of anæsthetizing animals about to be slaughtered, but no one has shown it to be practicable, just as a surgeon may not find it practicable to administer chloroform where some local anæsthetic like cocaine, or the ether spray would serve the purpose nearly as well.

It was pointed out that to justify vivisection the information must be obtainable in no other way. Let this be qualified by saying "in no other reasonable way," and to illustrate place the only two means that are in any way reasonable side by side. Take cholera, for example, in which experiments have been conducted on both principles. On the one side are the scientific infection experiments of Thiersch and others following him, performed by vivisection; on the other hand are the popular experiments which have at various times been performed during cholera on human beings, by companies supplying them with water and other commodities. Even the most confirmed anti-vivisectionist will commend the former way. But even if this knowledge could be arrived at in "some other way" at some future period, what of the suffering and death that must in the meantime come to the human race? What of those who must die unaided till the light comes in some hypothetical and mysterious way, and of those now living, whose lives are due to their laying hold of the remedies and the prophylactics which Vivisection has brought?

But it is not certain that the knowledge could be obtained in any other way, for the discovery of the lethal agents in the transmission of disease was only and could only be determined by means of experiments on living animals.

It remains to be proved that the human race has benefited considerably by the results obtained from vivisection. To discuss this in detail would involve the tracing of every step in the progress of medicine, for medicine is no longer an art to be practised by rule of thumb, and whatever progress it has made is due to observation and experiment. There was ground

for the mocking words of Voltaire when he jeered at physicians, "pouring drugs, of which they knew little, into bodies of which they knew less." They were doing their best in those previsection days; they gave the white spots on a leaf to consumptive patients; they gave the carrot in jaundice because it was yellow; for kidney diseases they gave fruits which resembled that organ. They were groping in the dark unaided by the light of experiment, and men were dying around them of complaints that to-day it is unnecessary to feel. Contrast the present position of medicine with that of fifty years ago, and you have a measure of the value of experiments, for the most part performed on living animals. Experimentation on animals for the benefit of humanity is the key note of modern medicine, and the physician who underestimates its value is out of tune with the best that is said and thought on the subject. Physiology is at the basis of rational medicine, and it is to physiology the physician must seek if he would be anything more than a "medicine man," a dispenser of chance gotten drugs. Experimental pathology is the synthesis as clinical diagnosis is the analysis of disease, and physiology reduces the facts to a system. If Physiology consists in the study of vital processes going on in living organisms, it follows that many of them must be studied as they actually take place. It is useless to appeal to the dead body, for though there the changes can be noted the processes will have passed away. In the dead body there is no disease, as Virchow remarked disease presupposes life.

It will be possible to refer only to the most notable examples of vivisectional results in relation to the practice of medicine, but enough will be given to obtain for it the justification of practical utility. Vesalius, the founder of anatomical study, states in his work on the human body that it was through experiments on living animals he was led to his wide generalizations in anatomy, which, before his time, consisted of shreds and patches of crude observation and false induction. Harvey, "having frequent recourse to vivisections," received the first hint of the circulation of the blood, by watching the palpitating heart of a living creature. Haller, who by his doctrine of "irritability," laid the foundation of the true physiology of the nervous system, wrought through pain and

death to animals. Charles Bell and Majendie traced out the distinction between motor and sensory nerves, and Marshall Hall demonstrated by vivisectional methods the occurrence and importance of reflex actions, by which one-half of our life is controlled. Weber demonstrated in the same way the inhibitory action of the pneumogastric nerve upon the heart, and laid down the principles of a rational treatment for the prevention of heart failure in diptheria and other acute diseases. Du Bois-Raymond, Pfluger, Flourens, Brown-Sequard, Schiff, Vulpian, Goltz, Waller; in fact all physiologists by their work attest that if physiology is not a hopeless puzzle and a baseless fancy it is due to the results of experiments on living animals. The chemistry of living beings was worked out in the same way by Lavoisier and Priestly, who first made out the chemistry of respiration. The chemistry of digestion and nutrition would yet have been a phenomenon and a guess if it were not for the labors of Schmidt and Bidder. Fever and inflammation, old mystic words, were never understood till Claude Bernard and Cohnheim made their researches on the vaso motor nerves of living animals. It was by vivisection Aselli and Pecquet discovered the system of lymphatic vessels and Malphigi the capillary circulation. Artificial respiration was made a practicable means of resuscitation by Vesalius, Hooke and Lower, through experiments made upon dogs. The experiments of Rev. Dr. Hales on pressure of the blood in the arteries are also to be noted. In the seventeenth century Sir Christopher Wren and other Fellows of the Royal Society experimented on the transfusion of blood, and recently it has been made a means of saving life. In 1835, a committee of physicians at Dublin showed how heart sounds are produced and enable clinicians to diagnose the various forms of heart disease. Duhamel in 1740, Sir Astley Cooper in 1820, Syme in 1831, and more recently Ollier and others have conducted experiments on living animals to show the processes by which wounds are healed and injured parts restored, and especially how fractured bones are united, the practical results of which are inestimable. The surgery of the old days has been robbed of its horrors through the results of vivisection. The "fearful fear of hemorrhagy" that the old surgeons felt is now groundless, through the experiments made in ligaturing the

arteries of animals. By this simple process the boiling oil, the vitriol and caustics, the hot searing irons and receptacles for blood are no longer seen at an operating table, where the surgeon is willing to avail himself of the benefits to be derived from vivisection. It was by such experiments the Esmarch bandage, a bandage applied to a limb about to be amputated to prevent the flow of blood, came into use. This inaugurated bloodless surgery. The principles of antisepticism were studied on animals, and with the introduction of aseptic methods all dread of pyæmia, fever, tetanus and secondary hemorrhage have disappeared. Inflammation is no longer a formula "redness swelling heat and pain," since by the experiments of Bernard, Virchow and Cohnheim, and later by Redfern and Von Recklinghausen, on the blood cells in the leg of a frog and the eye of a rabbit, its secret has been pierced and following it, new knowledge of abscesses, ulceration, gangrene and clots. The present abdominal surgery had its origin in Vivisection. In the American Civil War out of 3,717 cases of wounded intestines 3,273 ended fatally. A series of experiments was conducted in Chicago, in which 37 dogs were etherized and shot when the feasibility of opening the abdomen was proved. The percentage of fatal cases after such injuries at present is 12; before this experiment it was 88; that is, the position is exactly reversed, and if they had been performed before the Civil War, 3,273 soldiers, instead of 446, would now be living, and their injuries would not even be considered grave enough to entitle them to a pension. Sir Spencer Wells, by operating on dogs, introduced the practice of suturing the peritoneum and reduced the percentage of fatal cases from 34 to 11. Out of 1,000 cases of his, 760 were saved and 17,800 years added to the sum of human life. Martin, of Berlin, in the same manner, proved the possibility of ovariotomy, and performed this operation, which a few years ago used to be denounced as murderous, in 130 cases, with only one fatal result. By these observations on the opening and suturing of the peritoneum of animals, and the treatment of the pedicle by ligature, abdominal surgery is now a matter of routine.

Another feature in modern surgery is the progress made in operations on the brain, and all of these are based on experi-

ence gained by vivisection. Hitherto the brain was looked upon as the "oracle of God," but Dr. Ferrier, by his experiments on animals, demonstrated the location of sensory and motor functions in the cerebral hemispheres as clearly as if the skull and membranes surrounding the brain were transparent.

Dr. MacEwan, of Glasgow, in one year saved the life of ninety patients by following Ferrier's methods.

In one year Dr. Echeverria collected 165 cases of epilepsy, of which 75 were cured by following the principles of localization laid down by Ferrier, yet for these experiments the eminent doctor was haled before the magistrates as if he were a burglar or a swindler.

Thousands of patients died from malignant affections of the kidney till Simon at Heidleberg demonstrated on animals the possibility of its extirpation and the performance of the excretory function by a single organ. It was by an experiment of this kind, innoculating the udder of a cow to produce a vaccine pustule, that Jenner was aided in his great discovery of a preventive of small-pox.

By the experiments of Gerlach it has been shown that tuberculosis in cows can be communicated to healthy animals such as man, fed upon their milk, that the disease may be induced by tubercular matter being inhaled or taken into the stomach, facts of importance in relation to the prevention of the disease. By the sacrifice of a few dogs and rabbits information was obtained which may have, and as a matter of fact has had an important bearing upon the safety of the human race.

These results were arrived at by making on a few animals experiments which men for generations have in blind ignorance been making on themselves. Cholera has already been referred to, and since 1884 Freire in Brazil has been working to obtain a specific against yellow fever along vivisectional lines, and is only waiting for an epidemic to put his results at the service of mankind.

Rev. R. M. Luther, a missionary in India, by vivisection obtained an antidote successful in sixty cases out of a hundred of bite by the brown viper, and with it saved the life of a fellow-worker, who was afterwards instrumental in inducing 2,000 natives to embrace Christianity. Dr. Wood, by "baking

alive" at 120° two pigeons, ten guinea pigs, twenty rabbits and six dogs, that is, subjecting them to a temperature of 120°, a degree of heat which labourers often experience in summer, proved that sunstroke is due to the coagulation of the brain and heart, and from this he deduced the proper treatment, abstraction of heat from the body. The "morality" that will take offence at experiments such as these deserves the pitying contempt we would accord to personal cowardice. The only gleam of hope that has ever come to a patient affected with those terrible maladies, diseases of the kidneys, has been through Bernard's experiments on the formation of glycogen in the liver, and until the mystery is cleared up by the death of more animals the treatment of these diseases must remain a matter of empiricism.

Whatever of good Pasteur has conferred on mankind he has accomplished by vivisectional methods, and yet the results are out of all proportion to the pain inflicted. There is a danger of becoming technical, in pointing out that it was through observations made upon the tadpole by Arnold, it was found out that blood vessels are formed by the hollowing of protoplasmic cells, and to enter upon a discussion of what Embryology owes to Vivisection would take one far beyond the present limits and the needs of this discussion. The modern method of pharmacology is based on vivisection. Instead of "experimenting" on patients, the effect of a new drug is tested upon such plants as the algæ and fungi and then upon the frog, rabbit or dog. Its mode of action is exactly ascertained, and the physician knows what organs and structures will be affected, how they will be influenced and the changes which will be produced by the progress of a disease. Even if the charge were true that Vivisection had never added a drug to the pharmacopœia it would prove nothing, for it is the work of the vivisectionist to test the effects of existing drugs and define their uses. A few instances will suffice. If nothing were ever learned by vivisection but the action of Digitalis upon the heart, the pain caused would be abundantly justified. Bromide of Ethyl was brought forward as an efficient anæsthetic, but a vivisectionist by the death of a few dogs prevented a series of those dreaded accidents, death on the operating table, which would have followed its use. By operations on

animals Bernard discovered the hypodermic use of drugs, and Majendie of strychnine. Traube explained the real nature and use of digitalis and Maure of saline purgatives. Luchsinger, following up the clue, obtained from experiments on dogs, demonstrated the value of strychnine as a preventive of night sweats in consumptive persons, and by the same means nitrite of amyl was shown to allay the agony of angina pectoris and pepsin to be of value in dyspepsia. In the same way Jequirity was introduced in opthalmic surgery, Nitrite of Amyl in epilepsy, Salicylic Acid in rheumatism, Jaborandi in dropsy, Iodoform as an antiseptic, and the Bromides, Chloral and Paraldehyde as analgesics. All the new drugs—antipyrine, exalgine and antifebrine—that have cooled so many fevers and alleviated so much suffering, were all tested and their effects proved on animals. Who would have dared to use cocaine on the human eye, like all anæsthetics, "God's best gift to his suffering children," with all the risk of inflammation, if its effects had not first been ascertained on animals?

But this charge is not true, for Dr. Lauder Brunton has showed that between 1864 and 1867 seven drugs were added to the pharmacopœia, and from 1867 to 1874 eleven were added.

Commercially, Vivisection has been of the greatest practical importance. Dr. George Fleming, in his work on Veterinary Science, makes some estimates of the results. In one district in France sheep to the value of £213,600 died in one year of Anthrax, and in Russia 100,000 horses died annually till Braueil, followed by Delafond, Davain, Chauveau, Toussait and Pasteur, perfected the knowledge of the poison and shewed the means by which its energy may be abated. The desolating scourge of the cattle plague was stayed, and the silkworm disease was brought under complete control by Pasteur. Smallpox of sheep, the swine plague and distemper of dogs and chicken cholera can be prevented by innoculation. The exact method of the propagation of pleuro-pneumonia in cattle has been made out, which is the first stage in discovering a remedy. The ravages of epidemic fever in cattle and analagous diseases of horses and sheep have ceased since their nature and mode of prevention have been discovered by vivisectional methods, and hydrophobia is now robbed of its terrors. Glanders, a disease "as infectious as syphilis and as fatal as

tuberculosis," can only be diagnosed by the method of innoculating animals.

Another use vivisectional experiments have been put to is in the detection of murderers who have resorted to poison. The notorious Lamson, who was executed in England in 1883, may be mentioned. He used aconite to kill his victim, and the presence of the drug was only proved by its effect on small animals. If it were not for this, secret poisoners might enjoy all the immunity that was formerly obtained in the days of the Borgias.

It will be permissible to place in evidence some important statements on the value of Vivisection. The International Medical Congress, held in London in 1881, and which was attended by three thousand physicians and surgeons from Great Britain, America and foreign countries, passed unanimously the following resolution:—

"That this Congress records its conviction that experiments on living animals have proved of the utmost service to medicine in the past and are indispensable for its future progress, and while deprecating the infliction of unnecessary pain it is of opinion that in the interests of man and of animals it is not desirable to restrict competent persons in the performance of such experiments."

At the same Congress, Mr. Simon, principal officer of the Government Board, speaking in connection with diseases of horned cattle, of carbuncle and marsh fever, ventured to say "that in the records of human industry it would be impossible to point to work of more promise to the world, and they are contributions which from the nature of the case have come, and could only have come, from experiments on living animals." Before the British Medical Associationn in 1881 Professor Humphrey declared "almost every advance in our knowledge of the working of the human body has been made through Vivisection."

As Mr. Wilks puts the case for England, "All the leading men in Europe, those who are best capable of forming a true judgment, have expressed their opinion strongly in favour of experiments on animals, and have at the same time supported their opinion by an exposition of facts. Opposed to these savants are certain lords and ladies, certain bishops and members of Parliament, who, with all the dogmatism of mature ignorance, declare that "Vivisection only panders to curiosity,

without doing anything for science;" "that it is a detestable practice not attended with scientific results." I would ask the reader to picture to himself a platform on which Virchow, Pasteur, Humphrey, Foster, Simon, Huxley and Fraser unite in the statement that the remarkable advance in medical science and art during the past twenty years is due to experiments upon the lower animals, and immediately afterwards a sincere rural dean and a conscientious auctioneer uniting in stating "that experiments on animals led to no useful results."

In the United States resolutions affirming the value of experiments upon animals, and deprecating legislative interference, were adopted by seven medical schools, by the New York Medical Society, and by sixteen organizations in various localities.

Three of the leading American universities have been quoted in support of the practice, and to the number is to be added Harvard Medical School, a believer in the experimental method.

But, after all, there are a number of experiments, a small number, which necessarily involve pain to animals, and in their defence it is only necessary to fall back upon the original position that the pain is justifiable for the sake of the good that is accomplished. These are the ones necessary to demonstrate the effects of drugs, of poisons like that of cholera, and such as were performed by Chossat in which the animal must be deprived of food, but the experiments which cause pain become fewer and fewer as physiology advances until all that remains to be studied is pain itself, and the physiologist can study that best upon his own body.

Some hasty opponent has recommended Vivisectors to practice among themselves. And so they have. The names of Toynbee, found dead in his laboratory; Christison, Hunter, Heinrich, Dvorak and Schiff need but be mentioned in this connection.

It is not a pleasant occupation spending one's days and nights in nauseous dissecting rooms surrounded by dead and dying animals. Physiologists have found themselves ostracised and vilified, and their practice ruined for it when they had any, but the misrepresentation which they have suffered has

not stayed their hand from working for science and humanity. Like the Good Samaritan of the parable, they subjugate emotion and feeling to judgment, and do not pass by on the other side with pity or scorn.

The provision that vivisection should not be practiced unless there is a probability of beneficent results must not be pushed too closely, for science must be untrammeled. The science of to-day brings us nearer to the science of the future, and one truth may in an unseen way be the germ of others. Science has only to do with the seeking of truth, utility will follow in its train. Who, for instance, could foresee that a simple physiological preparation, the leg of a frog with its living but non-sentient nerve in the hands of Galvani, was to be the origin of Galvanism, electricity and allied subjects.

If one urge that experiments may be performed on one class of animals and not on another, it is to be said in reply that no two persons could agree where to draw the line between the bacillus and the dog, and some might even include within the pale the phylloxera that formerly destroyed the vineyards of a nation.

For the benefit of those who deny that utility and morality have any interdependence, it will be necessary to refer to the ethics of vivisection. If there is a moral wrong involved in experimenting on animals then, they say, no considerations of utility can justify it, even if by the death of one animal the light would break upon the pestilence that stalketh only in the darkness, and that there may be a knowledge which man is bound to forego, that the alleviation of human pain is not the highest good. According to the same principle it were better to starve than to do that violence to the moral nature which is involved in the death of a creature. They say that honour should deter man from exercising the tyrant's power, which nature has given him, and that it is well nigh impossible to deal rightly with animals when men are at the same time judge, accuser, witness and culprit.

Another class of objectors resist scientific research because it loves what art hates, analysis, and yet another class, because they accuse it of attempting to reduce God to a "physical necessity." To the one it may be said that art itself may have a basis in truth, and "to the solid ground of nature trusts

the mind which builds for aye," and the other class of objectors is urged to remember that the "Kingdom of God is within."

But the greatest show of reason is with those who object on what they call "moral grounds." Arguments have been urged against them by Virchow, who held that an animal was a man's "honestly bought chattel," and by Dr. Carpenter, who affirmed that moral duties exist only towards those possessing moral responsibility, but these do not meet the case. As reasoning beings we can only be reasonable when we deal with the facts around us as we find them. It would be easy to conjure up Swift's land of the "houyhnhnms," where the relations between men and beasts were reversed, but with this condiiton we have not to do; there is no brotherhood between man and beasts. Without insisting too strongly on the fiat which went forth in the world's first spring time, "Let man have dominion over the fish of the sea, and over the fowl of the air, and over the cattle and over all the earth," it is undeniably one of the principles of creation that animals are subordinate to man for his use in the progress of life. Nature has ordained it and Nature is not without pain to living beings whilst they dwell in this world, or whilst they come into or leave it. "The whole creation groaneth and travaileth in pain." Man has to live; like the Apostle he is enjoined to "rise, kill and eat." Man's duties towards inferior creatures must take in man's nature, which he cannot discard. Therefore his relations towards animals can only in a qualified sense be regarded as ethical, and the divine injunction cannot apply: "Do unto others even as ye would that they should do unto you." It would involve one in a tiresome discussion to include a consideration of sacrifice, vicarious and by compulsion, but it might be noted that the Great Teacher admitted that mankind was of more value than many sparrows.

If Vivisection is productive of good to humanity it remains to be considered under what restriction it should be practised. Vivisection and cruelty are in no way bound up together, and even if in some countries it appears that improper methods are used it does not follow that the practice should everywhere be restricted. Because exiles are badly treated in Russia it does not follow that no criminals should be sent to Siberia or that lawbreakers should go unpunished.

It yet remains to indicate the course and results of legislation in restriction of Vivisection from which it will appear that it has been both futile and harmful. The only country where restrictive legislation is really in force is England, though the attempt was made in Germany, Sweden, Denmark and the United States. The first important legislative attempt to restrict the prosecution of physiological research was by Lord Hartismere's Bill in 1875 in England, which aimed to restrict the work to specified places and licensed persons, and compelled the use of anæsthetics in every case. It was objected to as destructive of original work and never came into effect. Then a Royal Commission was appointed composed of Lord Cardwell, Lord Winmarleigh, Hon. W. E. Foster, Sir John Karslake, Professor Huxley, Mr. Erichsen and Mr. Hutton, to enquire into the "practice of subjecting live animals to experiment for scientific purposes." They examined every person in England likely to throw any light on the question. The evidence is contained in a bulky blue book, and in that report it is stated:

"The imputation of cruelty, which has always been indignantly repudiated, has not been substantiated by a single authentic instance. In their evidence given before the Royal Commission, the Society for the Prevention of Cruelty to Animals state through their Secretary that 'they do not know a single case of wanton cruelty.' The report also recommended 'that no ban be placed upon vivisection.'"

The teachers of physiology addressed a memorial to the House of Commons, in which it was stated: "We repeat the statement which most of us have made before the Commission, that within our personal knowledge the abuses in connection with scientific investigation, against which in this bill it is proposed to legislate, do not exist, and never have existed in this country. The memorial was signed by Professor Sharpley, University College, London; Dr. Wm. Carpenter, London Hospital; Professor G. Humphrey, Cambridge; Professor Rutherford, Edinburgh; Dr. Pavy, Guy's Hospital; Dr. M. Foster, Trinity College, Cambridge; Dr. Bourdon Sanderson, University College, London; Dr. Robert McDonald, Dublin; Professor Redfern, Belfast; Professor Cleland, Galway; Professor Charles, Cork; Professor McKendrick, Glasgow; Dr.

Pye Smith, Guy's Hospital; Professor Yeo, King's College, London; Mr. Charles Yule, Magdalen College, Oxford; Professor Gamgee, Owen's College, Manchester.

The Belgian Special Commission's report, published last July, practically substantiates this position. Notwithstanding the failure of a Royal Commission to obtain evidence of the abuse of physiological vivisection in Great Britain, the Legislature was induced to pass a prohibitory enactment, which has been so worked as almost to prevent experimental research on live animals in England ever since.

Lord Carnarvon's Bill prescribed:

1. That experiments must be performed with a view only to the advancement by new discovery of knowledge, which will be useful for saving or prolonging human life, or alleviating human suffering.
2. That they must be performed in a registered place.
3. By a person holding a license.
4. The animal must, during the whole experiment, be under the complete influence of some anæsthetics.
5. It must be killed before it recovers consciousness.
6. Experiments must not be performed for demonstration.
7. They may be performed for the purpose of acquiring manual skill.

In 1883 Mr. Reid introduced another bill, but it never came to a disussion. If it had passed it would have stopped all progress in physiology, pathology and pharmacology in those places coming under the influence of its provisions. The Home Secretary, Sir W. Harcourt, affirmed at the time "that under the then existing circumstances there was very little infliction of pain, and what suffering was caused was abundantly justified for the benefit of humanity at large."

The effect of this mischievous and meddling legislation was disastrous to English physiology, and compelled those who practiced vivisection to flee to France and Germany and to draw upon the United States for their medical knowledge. Mr. Lister found the working of the Act so "vexatious as to be practically prohibitory," and went to Toulouse to carry on his investigations. This scientist, whose observations and experiments in connection with infection have been the means of saving thousands of human lives, was obliged to discontinue

his investigations and conduct them in other countries. He said: "Even with reference to small animals the wording of the Act is so vexatious as to be practically prohibitory of experiments of a private practitioner unless he chooses to incur the risk of transgressing the law.

Dr. Greenfield, Pathologist in Edinburgh University, who was at work on investigations for the prevention of splenic fever, was forced to write:—"I have not been engaged in other investigations, for the simple reason that with the present restrictions and the difficulty of obtaining a license, I regard it as almost hopeless to attempt any useful work in this country. As the result of my experience it is my opinion that these hindrances and obstacles constitute a most serious bar to the investigation of disease and of remedial measures. When to this is added all the annoyance and opprobrium which are the lot of investigators, it is to be wondered at that anyone should submit to be licensed." He also mentions the case of a surgeon who came to him with what appeared to be a remedy for lock-jaw, to have it tested; the law forbade the experiments and the patient died.

Professor Fraser writes:—"In several instances in which the objects were of the highest interest and in which the importance of the results could not be predicted, the Government has constituted itself the supreme arbiter of science, and has ventured to decide that certain experiments were not required and should not be performed. I have only just now experienced the mortification of being refused a licence where permission was requested to perform a few experiments on rabbits and frogs with a reputed poison used by the natives of Borneo to annoint their arrows."

Professor Foster thus sums up his views:—"This legislative action has gone far to cripple physiological research in this country. Our science has been made the subject of a penal act. We are liable at any moment in our enquiries to be arrested by legal prohibitions. We are hampered by licenses and certificates. We are asked to make bricks when they have taken the straw away from us." Speaking of the Congress of 1881, in which Virchow declared the charge of cruelty was a subterfuge, Dr. Foster says:—"One good fruit of the present Congress is 'that our foreign brethren, seeing our

straits, will go home determined to resist to the utmost all attempts to put the physiological enquirer into chains, for we are assured that experiment is the best weapon with which we can fight against the powers of darkness of the mysteries of life.'"

Sir James Paget thought it intolerable that he might pay a rateatcher to poison the vermin about his place, and not be permitted to use them for the good of mankind, or that he should have to appeal to a Government official for leave to prick a mouse.

Dr. Lauder Brunton was engaged in England in experimenting with the poison of venomous serpents, when restrictive legislation was introduced and put an end to them. But the Government that introduced the legislation supplied Dr. Weir Mitchell and Dr. Reichert, who lived in a more reasonable country, with the snakes, and they succeeded in isolating the poison. This was necessary before discovering an antidote to a poison which annually carries off twenty thousand victims.

Mr. Horsley, in the *British Medical Journal*, protests against the difficulty of obtaining a license, and Dr. Wyatt Johnston observed that the incubation period of disease should be lengthened, since it usually developed before a license could be procured. Scientific men are averse to be licensed like publicans or prostitutes. They refuse to work in an atmosphere of distrust and suspicion, even upon subjects not proscribed by law, and object to having their laboratories searched by detectives as if they were smugglers' dens. Notwithstanding the existence of a law which limited the number of persons performing experiments to twenty-six in England, Scotland and Ireland, and under which the Government inspectors continually spoke of the cruelty practiced as "insignificant," "inappreciable," "equal to that caused by vaccination;" the opponents of vivisection were not satisfied. This was in the face of the report of the inspectors appointed by the Government. In 1878 they reported that there were not more than forty cases in which "an amount of suffering worth noticing was inflicted." In 1879 the number was twenty-five, ten of which were on frogs, and in the other fifteen the suffering was about equal to that caused by vaccination. In 1880 and the

two following years the inspectors report that there were only ten cases in which any pain was caused. The Irish inspectors reported that "the experiments were free from any appreciable suffering." Mr. Bush, in his report for 1884, admits that the "amount of direct or indirect actual suffering as the result of physiological and therapeutic experiments performed under the Act in England and Scotland was wholly insignificant." He then specifies that in the case of three frogs, six mice, thirty minnows and sticklebacks, some suffering might have been caused—a grand subject truly for a nation of whose newborn two per cent. die yearly from neglect. This legislation, so sweeping in its provisions and so drastic in its results, one would think, left to the votaries of the suppression of vivisection very little to desire. One of the foremost of them, Mr. Colam, acknowledged that after employing the "surveillance of detectives" he could "not accuse the physiologists of cruelty." Yet in 1883 every endeavour was used to have Vivisection totally prohibited. But, after all, Frances Cobbe, the chief scribe of the anti-vivisectionists, was led to exclaim: That "anti-vivisectionists recognized that their work must take the shape of an ethical and religious agitation." The law hampered and harrassed the vivisectionists for a time, till they were able to take up their work in other countries, but the total amount of pain inflicted was not diminished by one iota. Fortunately for humanity, there were centres where researches could still be carried out, but the results have not gone to further the credit of English physiological work, being arrived at under the ægis of foreign schools. The public is exacting of the ability of a physician, but by a senseless agitation it forbade the means of acquiring knowledge. Yet it has not been slow to avail itself of the advantages derived from physiological research, and would stand aghast if medical men were to cast aside what has been gained by the method of vivisection and return to the days when quacks flourished and vended their vaunted nostrums, their charms and cure-alls. But the indications are that English physiologists will not long remain under the burden, and it is fairly certain that a similar restriction will never again be placed upon scientific men.

In the United States there is really no restriction placed

upon vivisection, and the discussion of the question has been meagre. Professor Dalton makes the general statement:—"The exhibition of pain in an experimental laboratory is an exceptional occurrence. As a rule, all the cutting operations are performed under the influence of ether" (not of curare, which dulls the motor but not the sensory nerves). This is because the infliction of pain is generally no part of the experimenter's object, and on every account it is preferable to avoid it. In his own demonstrations he says: "I do not make experiments upon animals involving more pain than is caused, for example, by pithing to kill, or injecting an anæsthetic subcutaneously."

Dr. Leffingwell, by quotations from the physiological treatises of Professors Dalton and Flint, shows that there are only seven experiments in which anæsthetics are not always employed, and in them there is reason to believe the pain inflicted is either brief or not very severe. And there is also reason for belief that there is an annual decrease in the number of such demonstrations. The charge of Ray Lancaster is thus disproved, "that the number of experiments must increase in geometric ratio as physiology advances." Professor H. C. Wood writes, "So far as concerns the medical schools of Philadelphia, vivisection without anæsthetics is not practised to any extent, if at all, for class demonstrations."

In 1867 an Act was passed by the State of New York "for the more effectual prevention of cruelty to animals." It declared it a misdemeanor to "unnecessarily or needlessly mutilate or kill any living creature," but nothing in the Act was to be construed "to prohibit or interfere with any properly conducted scientific experiments or investigations performed only under the authority of some regularly incorporated medical college or university of the State of New York." This law was so vague its provisions did not interfere with vivisection any more than the Blue Laws prevent reasonable recreation on Sunday.

At the session of 1881, Mr. Henry Bergh introduced into the New York Legislature a bill providing: "That every person who shall perform, or cause to be performed, or assist in performing upon any living animal an act of vivisection shall be guilty of a misdemeanor," and "the term vivisection

used in this Act shall include every investigation, experiment or demonstration producing pain or disease in any living animal, including the cutting, wounding or poisoning thereof." The attempt was renewed in 1882, and again in 1883, but since that time nothing has been heard of the bill, and vivisection in America is practically untrammelled, a fact the English Government has not been slow to take advantage of to evade the provisions of its own laws. From this it appears that vivisection can be practised in a civilized country extensively and carefully, without cruelty or unreasonable pain, and without legislative interference. Indeed the physiologists and legislators of the United States have proved the case for unrestricted vivisection. As the celebrated Owen said, "The Legislature of the United States of America, assailed by well meaning ignorance, has refused to pass a law which would cast an unproven and unmerited stigma on scientific men."

If anti-vivisectionists claim that legislation has not diminished the practice as a whole, then their labor has been in vain; if they claim that it has, then they have committed a wrong against humanity in the light of the benefits vivisection has bestowed. But it is impossible to apply these principles by any other than moral force, and the great work the opponents of vivisection have wrought is, that they have stimulated and rendered sensitive the moral sense of operators, which deters them from unnecessary cruelty. In England and America, where the moral nature of the operator and community is well grounded, the suffering has been shown to be inappreciable, the number of operators small, and the operations few, but even on the continent there is nothing to show that cruelty is practised at the present day. In a common German manual of physiology this rule is laid down: "An experiment involving vivisection should never be performed, especially for purposes of demonstration, without previous consideration whether its object may not otherwise be attained. Insensibility by chloroform or other drugs should be produced whenever the nature of the experiment does not render this absolutely impossible." Indeed Professor Schiff of Geneva, one of the best known of continental vivisectors, has never found it necessary to practise on a feeling animal.

Dr. Pye-Smith, in his address before the British Association

in 1879, laid down the lines on which anti-vivisection legislation is at all permissible. "The only restriction which Christian morality imposes upon such practices is that no more pain shall be inflicted than is necessary for the object in view. Any one who would inflict a single pang beyond what is necessary for a scientific object, or would by carelessness fail to take due care of the animals he has to deal with, would be justly liable to public reprobation." This means that the physiological laboratories should be licensed like dissecting-rooms under the Anatomy Act in England, and licences given only to persons of adequate knowledge and known character, and that then the experts should be left to follow their own methods.

Upon the question of the restriction of vivisection, Professor Dalton says categorically: "I think investigators and teachers should be the sole judges as to what is necessary in their investigations and teachings." Dr. L. S. Pilcher believes it only necessary that "the public should be informed of the truth relating to vivisection in order that there should be secured to science every advantage and privilege which its advancement may need." Professor Wesley Mills, the leading physiologist in Canada, declares openly that a scientist can be the only judge of the rights and obligations of his own profession. Dr. Osler, his predecessor, now of Johns Hopkins, was of a similar mind. In Dr. Yeo's table it is admitted that only one experiment in a hundred is painful. Legislation aims to deal with this one case, and in doing so suppresses the other ninety-nine as well, and the way to ensure that not more than one case in a hundred shall be painful and yet science go untrammelled is not by legislative enactments based on sentiment and insufficient knowledge, but as Frances Cobbe, its most ardent opponent, admits, "by an ethical and moral agitation," by a more refined morality on the part of the operators and the community in which they live, brought about by the methods of ethics and religion. The action of the Societies for the Prevention of Cruelty to Animals, by countenancing the extremists who would suppress vivisection, has alienated the support of physicians whose position and relations would be invaluable in furthering the general aims of the Societies. The medical journals are no longer shy of the practice. Under the influence of public opinion at one time they spoke of vivisection apolo-

getically and with caution; in recent years they adopt no line of excuse and treat the objections of the opponents with aggressive scorn, confident that false sentiment, assumptions, and illogical reasoning cannot, in the long run, retard the progress of light.

It does not appear either that restrictive legislation has lessened the sum total of cruelty, or that physiologists have altered their methods under its compulsion. It will always be ineffective, because there will continue to be communities not over powered with "genuine British narrowness," where biologists can labor unimpeded in the name of truth, science and humanity.

The extent to which legislators should interfere with vivisection is very limited, unless they choose to incur the responsibility Darwin speaks of that "he who retards the progress of physiology commits a crime against mankind." Physiologists themselves assent to the principles laid down by Sir Thomas Watson: that experiments must not be performed at random to see what will happen; that they must have some object in view, a question to settle or a doubt to remove, and with a reasonable hope of resulting benefit; that operators have the skill, judgment and intelligence, and previous knowledge to make experiments successful and instructive; that they guard against everything that would enhance pain, and do nothing out of mere curiosity.

Looking at the whole question from the distance of a few years, and in the light of the results that have been attained since then, it is clear that the outcry against vivisection has been the result of a popular delusion that cruelty and vivisection were synonymous, that the experiments were useless and unnecessary. and that the same knowledge might have been gained in some other way.

But the present exposition of facts shows that vivisection is not of necessity cruel, and should not be interfered with, since

1. It has tended to correct and extend our knowledge of the functions of the human body.

2. It has aided in obtaining exact knowledge of the processes of disease.

3. It has tested the remedies by which diseases are to be controlled.

4. By it the means have been ascertained of checking contagion and preventing epidemics both in man and beasts.

5. Poison can be detected.

6. All this information could have been obtained in no other way.

7. There is no moral wrong involved in the operations either to animals, to operators, or spectators.

While physiologists and physicians know it as a fact that the road to a more perfect medical science lies through experiment, it may be painful experiment, they can afford to resist the clamour of those whom they would serve, believing, by the added experience of two centuries, with Harvey of immortal name, who, in speaking of this same subject, declared that skill and knowledge could be arrived at "*non ex libris sed ex dissectionibus.*"

DEATH UNDER CHLOROFORM.

Dr. Ed. Evans, LaCrosse, Wis.

March 23rd, 1891.—I was called about noon to see a woman who had been delivered about twelve hours before by a midwife, after eighteen hours labor. The placenta was retained. She was 37 years old, VII-para ; large, pale, exsanguinated looking. She was lying on a filthy bed ; soiled clothing, with blood, etc., had not been removed. The stench was terribly foul. Pulse 124, regular, fairly full and strong ; temperature 101°. Abdomen slightly tender and full fundus above umbilicus. Nurse declared she lost but little blood. After changing clothing and thoroughly cleansing exterior parts and vagina, I gave chloroform. She took it easily, and was soon under its influence ; altogether a little less than two drachms was used. I gave the mask to nurse, with instructions to use a little if directed. I then removed the placenta and gave a hot, weak carbolic, uterine douche, patient all the time seeming to breathe well. Just as I had finished, patient gave a gasp, and in less than two minutes was dead, after giving two or three more irregular gasps. I used all possible means to restore her ; saw that the tongue was forward and throat clear, lowered the head (inversion), used

hypodermic of brandy and artificial respiration, but to none of these did there appear to be the least response. A post-mortem was not allowed. The verdict of the coroner's jury was, "Death under chloroform, no blame attaching to any one."

Careful examination before giving the anæsthetic failed to reveal any evidence of heart or lung trouble, and her history was one of uninterrupted good health. There was no history of kidney trouble. There was no urine in bladder. This woman's death impressed on me the oft-repeated and oft-neglected warning, "When possible to avoid doing so, never give an anæsthetic alone." It also impressed on me the words of Dr. Allis, of Philadelphia. He says: "A study of the accidents, the modes of death, and the efforts at reanimation, has led me to put little confidence in restoratives. Most of those resuscitated reacted promptly within a few seconds, certainly within a minute or two. Unless the heart and lungs resume their functions promptly, I believe death always follows. I do not believe a life has been saved by tracheotomy or artificial respiration, if five minutes have passed without good results."

Hospital Reports.

MONTREAL GENERAL HOSPITAL.

Condensed Reports of Cases in Dr. MacDonnell's Wards.

TYPHOID FEVER.

During the twelve months ending March 31st, 1891, I have had under my care in the wards thirty-two cases of typhoid fever. For the most part these patients were admitted during the winter service, and the results of the treatment was more satisfactory than in the series previously reported,* for there were no deaths, although a large proportion of the cases were of a severe type.

The connexion between tuberculosis and typhoid fever.—This point has been particularly carefully studied. In clinical lectures, as well as in the wards, I have frequently expressed the opinion that tuberculosis very rarely follows typhoid, and that when a case of fever ends in phthisis, the original diagnosis of fever will not bear inspection.

It would seem that there is such a thing as a tubercular fever, a condition of the body preceding the actual local manfestation of pulmonary tuberculosis. The routine examination of the sputum of all patients with febrile symptoms would, I am sure, lead to the early recognition of the true nature of such cases. Everybody can remember cases called typhoid fever in which fever is really the only symptom, the abdominal disturbances being entirely absent. In some cases such as these, phthisis may in course of time develop itself and be then regarded as post-typhoid tuberculosis. The following is a case in point:

J. S—, aged 25, a well-built young Irishman, was admitted Jan. 25th, 1890, complaining of general weakness. He says that he was in hospital for three weeks, in 1877, with "typhoid." The family history was little more than negative, the father and mother both being alive, but one brother died of "water on the brain." He says that his illness began, three weeks before admission, with headache and diarrhœa. There was then a slight cough. He remained three weeks in hospital, the temperature

* One Hundred Cases of Typhoid Fever. The Medical News, Sept. 6th, 1890.

rising and falling in a somewhat intermittent fashion until the beginning of the third week, when it became normal. There was diarrhœa when he was in the hospital. The tongue was noted white fur at centre and tip, and edges clean. The splenic enlargement was not present. There were no spots. No physical signs were ever found in the lungs, though they were most carefully looked for. The case was regarded as one of typhoid fever. Eleven months later he was readmitted with perineal fistula. Evidences of extensive consolidation were found in both lungs, and bacilli were in the sputum.

Now, on looking into this case it is plain that if we leave out the fever, which itself was not characteristic, we have little that belongs to typhoid fever. I believe this febrile attack to have been of tubercular nature. The previous attack of so-called typhoid fever is significant.

Another supposed case of typhoid was that of H. K. He was admitted on the 24th March, 1890. No family history of phthisical affections. He had previously had acute rheumatism. He had been ill one week with headache, chills, and pains in the back and side. Although pain in the chest was a prominent symptom throughout, yet there were some symptoms which were thought to point to typhoid fever, such as pain, tenderness and gurgling in the right iliac fossa, and furred tongue. Repeated physical examination of the lungs gave perfectly negative results. After a very long illness of 76 days, he was discharged as convalescent and resumed his duties, when, after a fortnight, he began to suffer from pain, shortness of breath, loss of appetite and feverishness, and was readmitted with his right chest full of fluid, which was aspirated; and after a stay of some weeks, he was discharged. I have not heard of him since. Although I called the case one of typhoid fever, I must now regard it quite differently. The continued fever and pain in the chest—they were not localized—point to the presence of a cause acting slowly, in this case, on the pleura and developing into a pleurisy, which, I take it, is here the first open manifestation of the oncoming of pulmonary tuberculosis. Pleurisy is one of the rarest of typhoid complications, and when present, is in almost every, if not every, instance purulent.

The Skin Eruptions.—In my report of one hundred cases I was struck with the fact that typhoid rash was entered in the case-books as occurring but 51 times. Not sufficient care had been taken in searching daily for cutaneous eruptions. They were present in 19 of the 32 cases, and some of them enabled me to verify Murchison's observation that typhoid rash is often found on the backs and shoulders when it is not present on the abdomen or chest. The detection of the rash is an important matter, inasmuch as it fixes the diagnosis. Cases with no skin eruption whatever should be looked upon as requiring strong corroborative evidence in support of a diagnosis.

In one case the rash was most profuse. Beginning to appear upon the abdomen, it extended gradually all over the body to the arms and thighs and over the neck and face, extending as high as the lower lid of the right eye. This proved to be a most severe case.

Scarlatiniform rash was observed in 54 cases. It was particularly well marked about the neck and chest, but though I call it scarlatiniform for want of a better name, it differs from the eruption of scarlet fever in being of a much lighter red, not being punctate, but very profuse. No throat symptoms were present at all. In one of the patients who presented this rash at the commencement of the disease, an outbreak of urticaria occurred in the fourth week; this followed close upon the administration of a dose of bromide of potassium. But in another case, urticaria made its appearance at a time when no medicine was being taken. All four cases in which scarlatiniform rash was present were severe and prolonged.

In the case of a young woman who was convalescing from a mild attack, herpes zoster set in severely and gave rise to a great deal of suffering.

Abdominal Symptoms.—In but one case was there diarrhœa, and no severe meteorism was present in any case.

Enlarged Spleen.—The spleen was in every case examined daily with the greatest care, and was found to be decidedly enlarged in twelve cases. Splenic enlargement must be sought for from day to day. We have notes of cases where the patient

was admitted with a small spleen, but as the fever went on the organ underwent enlargement. Without careful and repeated examination such a change might easily escape notice.

Two cases presenting unusual features.—These two cases illustrate the extraordinary length of time a case of typhoid fever may last, as well as some other interesting complications:

R. W. B., æt. 44, was admitted on what was probably the tenth day of his fever. I have already spoken of the rash in this case, which extended all over the body even up to the level of the eyelids. He remained in hospital 100 days. The temperature became normal on the 35th day, remained so for a week, rose slowly to 102°, remained high for another three weeks, very slowly coming down to normal. The case presented many of the most unfavourable symptoms of typhoid fever, viz., delirium, continued high temperature, abdominal distension, retention and subsequently incontinence of urine. The most alarming symptoms were referable to the heart. On the 52nd day it was first noticed that the pulse was intermittent and irregular. During the next twenty-four hours the pulse at the radial beat sometimes at 60 and 70, sometimes at 120, while the beats of the heart, counted at the apex, were always 120. The sounds were fœtal. The following day this disturbance disappeared. Apart from cardiac weakness, which was manifestly present, another cause existed in the fact that the stomach was greatly distended. During the period of his apyrexia he was taking quinine in small doses, and I stopped this and substituted digitalis, with a good result. Tongue very dry and brown. The relapse continued in progress, a second eruption appearing on the 61st day. He was discharged on the 110th day of the fever. Shortly afterwards a periostitis of the second rib, its cartilage and a portion of the sternum developed itself, forming a firm swelling on the front of the chest, quite painless and non-fluctuating. This remained unchanged for some three weeks, when he went to his home, and I have not heard from him since.

This typhoid affection of the ribs and cartilages was new to me, but it has been described and lately has received great attention. Helferich,* in a paper read at the recent Bremen

* Berliner Klin. Wochensch., No. 42, 1890. See also the Practitioner, March, 1891.

Congress, gave the result of his observations in eight such cases. The seat of the affection was always the chest, more especially the cartilaginous portion of the ribs, and the swelling was followed by redness of the skin, discharge of pus, and the formation of a sinus leading to a small cavity filled with weak granulations, in which lay exposed perichondrium. Helferich observed that this typhoid rib affection differed from tubercular disease of the ribs in the fact that, even if it existed a long time, it never lead to depression of the patients general condition. The cases reported were those of persons well on in years—31 to 63.

Another very prolonged case was that of Jane H—, æt. 33. She was 94 days in the wards, being six days ill before admission. Normal evening temperature was reached on the 31st day, and there was an apyrexial period (the temperature was taken every two hours) of six days. Apparently without a cause the temperature then slowly began to rise, and remained at points between 104° and 102° for fourteen days, but never again fell to normal until the 81st day. The tongue became brown with the relapse, and a fresh crop of spots appeared. The complication seemed to rise entirely from the stomach. Severe pain in the upper part of the abdomen was complained of from the first, and through the active part of the fever violent retching was present at very short intervals. The patient's condition was most distressing, and all treatment was quite unavailing. The retching began to be troublesome on the 36th day, and it was not until the 61st day that it ceased. At one time, when it was at its worst, a round worm was vomited, and it was hoped that the violent efforts at emptying the stomach would then cease, but its expulsion seemed more the effect than the cause of the retching. Abdominal symptoms, such as tympanites and diarrhœa, were absent throughout. She made a very good recovery.

Other complications—Pregnancy.—I have reported in detail elsewhere the case of M. W., a woman aged 33, who was some seven months pregnant. At the date of her admission in August, 1890, typhoid fever was undoubtedly present, as was evidenced by the presence of spots as well as other symptoms. She went home after the temperature fell to normal, was delivered of the

child, and some three weeks afterwards returned to hospital with a relapse of fever and fresh spots. She brought with her two daughters, aged about 11 and 13, both of whom had typhoid fever in most typical form. This woman's temperature never went down. She developed periostitis in the right tibia and a discharging sinus remains. We found physical signs of phthisis at the left apex and bacilli in the sputum. Since then she has had attacks of dry pleurisy and has plainly drifted into a condition of chronic tuberculosis.

Typhoid fever in a patient whose appendix vermiformis had been removed.—About a year ago the appendix of Julia B—, æt. 23, was removed by Dr. Shepherd successfully. It was her third attack of appendicitis, and her case was instructive from the fact that although all the symptoms of general peritonitis were present at the time of the operation, yet when the abdomen was opened the disease was still local. After the operation a hernial protrusion remained, which was difficult to keep reduced. The fever was very severe, but the special complication was incessant cough, which caused protrusion of the hernia.

In some cases of typhoid very severe cough is an annoying complication. It wastes the patient's strength and suggests a formation of tubercle. This, however, I have never observed. In another case besides this one, incessant cough has proved an alarming symptom, but in neither could any evidence of phthisis be obtained. In both, morphine was given in large enough doses to afford relief.

Treatment.—All these cases were treated on the plan commonly called expectant. In this series of 32 cases, sulphurous acid in 20 minim doses was administered during the acute stage of the disease. It is significant that no meteorism was reported. The number of cases noted is too small to allow conclusions to be drawn.

Reviews and Notices of Books.

Principles of Surgery. By N. Senn, M.D., Ph.D., Professor Principles of Surgery and Surgical Pathology in the Rush Medical College, Chicago, Ill., etc. Illustrated with one hundred and nine wood engravings. Philadelphia and London: F. A. Davis, publisher. 1890.

This work by the well known surgeon and pathologist, Prof. Senn of Milwaukee, supplies a real want. Most of the recent works by English and American authors are undoubtedly defective in those parts relating to the principles of surgery, taking little heed, in fact, to those great discoveries relating to the pathology of surgical diseases. It has evidently been the aim of our esteemed author to fill this great want in surgical literature. As he very truthfully says: "The student who has mastered the principles of surgery will have no difficulty in applying his knowledge to practice, while the one who has burdened his memory with numerous details to meet special indications is always at a loss in making prompt and judicious use of his therapeutic resources when confronted by rare lesions or unexpected emergencies."

It would be impossible, in the short space allotted us, to give anything like a comprehensive review of this admirable book. The first and second chapters are devoted to the subject of "regeneration," having special reference to wound-making in all tissues. Then follow inflammation and its various terminations. Much space is given to the important and interesting subject of "Pathogenic Bacteria." The author has here evidently drawn largely from his previous well-known work on "Surgical Bacteriology," although much is new. The chapters on septicæmia, pyæmia, erysipelas, tetanus, and surgical tuberculosis are very interesting. The latter, "Surgical Tuberculosis," is, we happen to know, one of Professor Senn's pet subjects, and hence no less than five chapters are devoted thereto. We find everything here from the first inoculation experiments of Kortum in 1789 down to the recent investigations of Koch, but exclusive of his lymph inoculations.

On account of its purely scientific character this work will of necessity interest only a limited number of the profession—teachers and advanced students especially,—but we hope that in future editions the author will find opportunity to introduce his advanced views on antisepsis and his well-known original work in abdominal surgery.

A Text-Book of Hygiene. A Comprehensive Treatise on the Principles and Practice of Preventive Medicine from an American Standpoint. By Geo. H. Rohé, M.D. Second edition; pp. 421. Philadelphia and London: F. A. Davis, publisher. 1890.

For years past students and teachers of hygiene in medical schools have found themselves at a loss for a text-book that contained the essentials of the subject as taught in the curriculum leading to the M.D. degree. In America the valuable encyclopædic treatise edited by Dr. Buck was at hand, but for a college text-book it was manifestly constructed on too large a scale. Parke's Hygiene, the standard English text-book, was also too comprehensive in its scope and an undue proportion of its pages was devoted to the hygiene of the soldier. The other text-books were for the most part written for local use, and better adapted for those living in Great Britain than for those living in America.

The aim of the author is to place in the hands of the American student, practitioner and sanitary officer a trustworthy guide to the principles and practice of preventive medicine, and he states in his preface to the first edition that though he cannot flatter himself that much in the volume is new, yet he hopes that nothing is untrue.

The twenty-two chapters deal with the subjects which are commonly comprised under the title Hygiene, and are well written. The information given to the student fulfils all his requirements. No page in the book can be passed over as containing matter not worth learning. A useful feature in the work is the carefully prepared bibliography which is to be found at the end of each chapter, by the means of which the student who wishes to pursue the study of the subject he may have in hand is enabled to find further information.

Heredity, Health, and Personal Beauty. By JOHN V. SHOEMAKER, A.M., M.D. Philadelphia and London: F. A. Davis, publisher. 1890.

This is an octavo work of more than 400 pages, much of the really valuable matter of which has already appeared in the small popular volumes of the health series. If an important connection between the above three topics, especially the first and the others, had been established, new and valuable results would have been achieved; as it is, we confess that this is one of the books of that numerous class that leave one in doubt as to whether, upon the whole, they had not better have been left unwritten. Especially do we feel thus after reading or rather glancing at the contents of certain chapters, for we are inclined to believe the mind is not rendered more pure or healthful by their perusal. Few men seem to be able to write of the sexual relations, of female beauty, of matings, and kindred topics successfully. The result is sometimes, at all events, a rather unpleasant disclosure of the author's own inner life. All these topics are worthy of a dignified and scientific treatment such as Darwin has given them; but what good purpose, for example, a description of a party of female bathers surprised by one of the opposite sex can serve is beyond our comprehension; but, of course, there is much we cannot ourselves fathom. But of one thing we do feel convinced—that the responsibility of such writing is very great.

Essentials of the Diseases of Children. By W. M. POWELL, M.D., Physician to the Clinic for the Diseases of Children, Hospital of the University of Pennsylvania. Philadelphia and London: F. A. Davis. 1891.

The work is based on large hospital experience, as well as the substance matter of the chief authors on the diseases of children, and discussed ably and briefly from a symptomatic and therapeutic standpoint. To the student as well as the general practitioner, who must also be a constant student at the bed-side, this work will be found useful. The diseases of children are often obscure, and depend, as to diagnosis, more on the careful ob-

servation of the medical man than the information to be obtained from "the little hope of the house." A timely hint or a practical observation such as may be obtained from this little volume may prove of great service. Being the outcome evidently of patient work, carefully thought out, we consider it worthy of a place in the library of the progressive practitioner.

Essentials of the Practice of Medicine. By HENRY MORRIS, M.D., Philadelphia. With an Appendix on "The Examination of Urine," by LAWRENCE WOLFF, M.D. Philadelphia and London: F. A. Davis. 1891.

This compact volume of between three and four hundred pages is intended as an aid to students of medicine, chiefly during their college course of study, and to young practitioners as an aid to both diagnosis and treatment. At the very commencement of medical practice there is nothing so important as the careful noting of all cases that present for treatment. Let the habit of collecting facts or data be cultivated and established, and in after life it is impossible to estimate the benefits which will result. This volume will be found of great service in the lines of careful direction as to facts, the very essentials of practice. Under these circumstances we would recommend this work as one worthy of careful study, inasmuch as it may prove as serviceable as an electric light to a previously dark pathway.

The Pocket Materia Medica and Therapeutics: A Resumé of the Action and Doses of all Officinal and Non-officinal Drugs now in Common Use. By C. HENRI LEONARD, A.M., M.D., Professor of Medical and Surgical Diseases of Women and Clinical Gynæcology in the Detroit College of Medicine. Detroit: The "Illustrated Medical Journal Company," publishers.

This volume, intended mainly for practitioners, will fulfill a useful purpose. It gives in a short space the more important actions and uses with the preparations, doses and mode of administration of all officinal drugs, and nearly all the recently introduced agents.

Diabetes: Its Causes, Symptoms and Treatment. By CHARLES W. PURDY, M.D., author of "Bright's Disease and Allied Affections of the Kidneys," &c. With clinical illustrations. Philadelphia and London: F. A. Davis. 1890.

The author of this work is well and favorably known through his excellent manual on Bright's Disease. The treatise on Diabetes shows the same care in preparation, and will prove useful to any one desirous of acquainting himself with the most recent views on the nature and treatment of diabetes. The chapter on the dietetic treatment is especially full and ably written, and will well repay a careful perusal. We are pleased to find the author devoting some space to the consideration of the natural mineral waters of this country, which may be employed with benefit in this disease.

The Modern Antipyretics: Their Action in Health and Disease. By ISAAC OTT, M.D. E. D. Vogel, bookseller, Easton, Pa. 1891.

This work is mainly devoted to the consideration of original observations performed by the author and his assistants. The nature of fever is first considered, and then a valuable chapter devoted to the discussion of the mode of action of antipyretics, and we finally have a short account of the more important antipyretic agents. The book reflects credit on American medicine.

A Treatise on the Diseases of the Nervous System. By WM. A. HAMMOND, M.D., Surgeon-General U.S. Army Retired List, Late Professor of Diseases of the Mind and Nervous System in the College of Physicians and Surgeons, New York, &c. With the Collaboration of GRÆME M. HAMMOND, M.D., Professor of Diseases of the Mind and Nervous System in the New York Post-Graduate Medical School and Hospital, &c. With one hundred and eighteen illustrations. Ninth edition, with corrections and additions. New York, D. Appleton & Co.; Montreal, W. Foster Brown & Co. 1891.

The ninth edition of this well-known work has been thoroughly

revised and brought up to our present knowledge of this intricate and extensive subject. Dr. Hammond's work has always enjoyed a popularity not only on this continent, but also on the continent of Europe, as is evidenced by its translation into the French, Italian and Spanish languages. From the care bestowed by the learned author, with the assistance of his son, on the present edition, there is no doubt but what it will be as cordially welcomed as its predecessors have been. The work is profusely and well illustrated, and reflects credit on the well known publishers.

The Medical Annual and Practitioner's Index: A Work of Reference for Medical Practitioners. Editor: Percy Wilde, M.D. 1891. Ninth year. Bristol: John Wright & Co.; Toronto: J. A. Carveth & Co.

This excellent manual differs mainly from the Year Books of Treatment in containing, in addition to an account of the progress of medical and surgical science during the past year, several valuable monographs on different subjects. Among the latter may be found an admirable article on "The Position of the Hand in Nervous Diseases," by Dr. Long Fox of Bristol. It is illustrated with several well executed colored drawings. Another article of merit is one on "The character of the Sputum as an Aid to Diagnosis," by Dr. Wethered of London. The "Motor Centres of the Brain," also well illustrated, presents, in a short space, a very complete report of most of the recently acquired knowledge of the anatomy and physiology of the cerebral motor cortex. An article of particular value is one on "The Diagnosis of Gastric Neurasthenia," prepared by Dr. Dujardin-Beaumetz of Paris.

As showing the value of the work as a book of reference for the medical practitioner, the index of the volume contains nearly three thousand references to diseases and remedies.

Twenty-first Annual Report of the State Board of Health of Massachusetts. Boston: Wright & Potter Printing Co., State Printers. 1890.

Though the reading of blue-books is not usually regarded as

very entertaining, yet we always look forward to the Annual Report of the Massachusetts State Board of Health. The issue of this year is in no way inferior to any of its predecessors, and a perusal of it will convince the reader that substantial progress in sanitation has been made. The reports which form the volume are all of a very high order of merit, and deal with the subjects of Water Supply and Sewerage, Food and Drug Inspection, Pollution of Ice Supplies, Summary of the Weekly Mortality Reports, Intermittent Fever in Massachusetts, the Physique of Women in Massachusetts, the Influenza Epidemic of 1889-90, the Health of Cities and Towns. In the space at our disposal we can do no more than merely call attention to the more instructive of these papers.

There is an evident diminution in the frequency of adulteration of food and drugs, and when we compare this report with its predecessors it is plain that the world has become a little more honest, at least a little less dangerously dishonest than formerly. We are still prepared to hear that maple syrup is usually not maple syrup but glucose, and that the result of the labours of the little busy bee is to produce, not honey, but grape sugar; but these, though fraudulent, are not dangerous. Seemingly the only dangerous impurity detected in articles of food was lead, which was present in preparations sold as "lemonade" and "sarsaparilla," and contained in bottles provided with patent stoppers composed of metallic lead, which, being in constant contact with the acid liquids, was readily acted upon by the latter, which were thereby converted from harmless drinks into subtle poisons. Our Montreal experience with soda water is somewhat similar.

Dr. C. H. Cook's report on Intermittent Fever in Massachusetts tends to show that gradually ague as an indigenous disease is becoming common in the State, but he contents himself with the storage of deserved facts, leaving time to prove whether the disease is on the increase. Very interesting maps accompany this essay.

The influenza epidemic of 1889-90 has been thoroughly investigated, the report comprising the results of observations by about

400 persons. In Massachusetts the epidemic did not cease in the first three months. For several months afterwards deaths were frequently recorded, which must be attributed to illness contracted during the epidemic period.

The diagrams, maps, etc., accompanying the report are admirably executed.

Transactions of the Medical Society of the State of Pennsylvania at its Fortieth Annual Session, held at Pittsburg, 1889-90. Vol. XXI. Published by the Society. Philadelphia: Wm. J. Dornan. 1890.

The twenty-first volume of the Medical Society of the State of Pennsylvania is more than usually interesting. The addresses on Medicine, Hygiene, Surgery, Obstetrics and Mental Disorders are all prepared with great care, and touch upon subjects of practical interest in these various departments. Dr. Tyson of Philadelphia has a paper on "The Management of Obstinate Dropsies" of particular interest. He gives a record of three cases where the employment of skim-milk and sparteine in two and caffeine in the third brought about a marked and decided relief. There are a number of other papers, which will well repay perusal.

BOOKS, PAMPHLETS, &c., RECEIVED.

The International Medical Annual and Practitioner's Index: A Work of Reference for Medical Practitioners. 1891. New York: E. B. Treat, 5 Cooper Union.

A Compend of Equine Anatomy and Physiology, by William R. Ballou, M.D., Professor of Equine Anatomy, New York College of Veterinary Surgeons. With twenty-nine graphic illustrations, selected from Chauveau's "Comparative Anatomy." Philadelphia, P. Blakiston, Son & Co.

Essentials of the Practice of Pharmacy. Arranged in the Form of Questions and Answers, Prepared especially for Pharmaceutical Students, by Lucius E. Sayre, Ph.G., Professor of Phrmacy and Materia Medica, of the School of Pharmacy of the University of Kansas. Philadelphia, W. B. Saunders, 913 Walnut street.

Origin, Purpose, and Destiny of Man, or Philosophy of the Three Ethers, by William Thornton, Boston. Published by the Author. 1891.

Early Diagnosis of Some Serious Diseases of the Nervous System: Its Importance and Feasibility, by E. C. Seguin, M.D. (Reprinted from the Boston Medical and Surgical Journal of December 25th, 1890, and Feb. 5th, 19th and 26th, 1891,) Boston, Damrell & Upham. 1891.

A Study of the Anæsthesias of Hysteria, by Charles L. Dana, M.D., Professor of Diseases of the Nervous System in New York Post-Graduate School. From the American Journal of the Medical Sciences, October, 1890.

Morvan's Disease; with the Clinical Report of a Case, by Archibald Church, M.D., Professor of Neurology in the Chicago Polyclinic. (Reprinted from the Journal of the American Medical Association, March 7, 1891.)

How Should Girls be Educated? A Public Health Problem for Mothers, Educators and Physicians, by William Warren Potter, M,D., of Buffalo, The Anniversary Address of the President delivered at the Eighty-fifth Annual Meeting of the Medical Society of the State of New York. (Reprint from Transactions, 1891.)

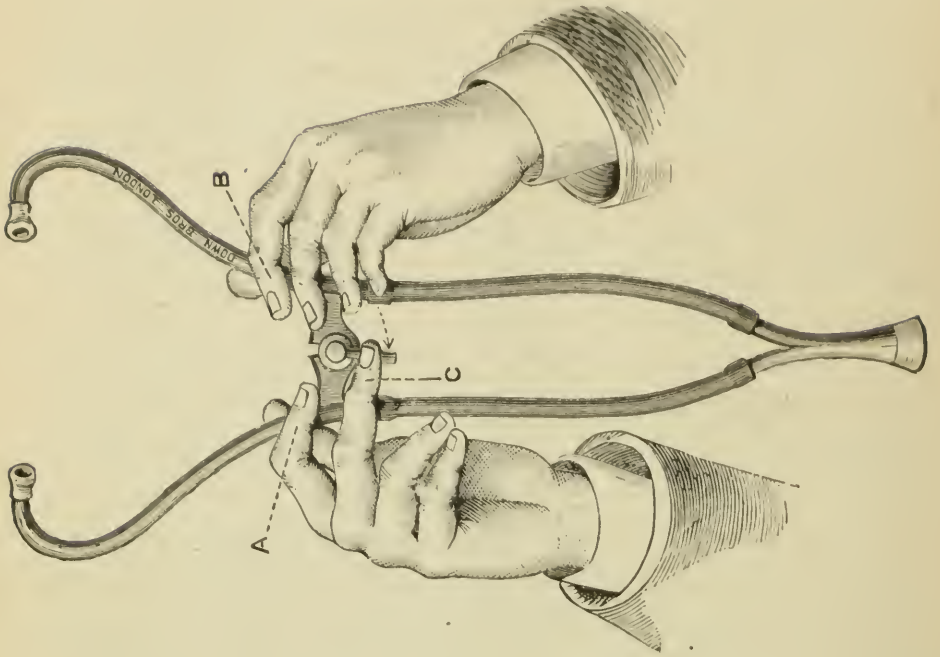
The Thermometer in Obstetrics and Gynæcology, by A. D. Leith Napier, M.D., F.R.S., Physician-Accoucher, St. Pancras and Northern Dispensary. London, H. K. Lewis. 1890.

On the Use of the Oil of Eucalyptus Globulus, combined with other Antiseptics, in the Treatment of Scarlet Fever and all Infectious Diseases, by Brendon Curgenven, M.R.C.S., formerly House-Surgeon to the Royal Free Hospital. London, H. K. Lewis. 1891.

A Case of Non-Alcoholic Cirrhosis of the Liver, by D'Arcy Power, M.B. (Reprinted from the Transactions of the Pathological Society of London.)

The Franklinic Interrupted Current, or My New System of Therapeutic Administration of Static Electricity, by Wm. Jas. Morton, M.D., of New York. Reprinted from the Medical Record, Jan. 24, 1891.

NEW INVENTIONS.



The illustration shows an improvement in the binaural stethoscopes generally in use, suggested by Dr. George Herschell of West St. Finsbury Circus, and patented by Messrs. Down Bros. of St. Thomas's St., London, S.E. The objection to the ordinary forms is that whether the spring which holds the two arms in position and presses the ear-pieces into the meati is formed of elastic or of steel, it is frequently found either too weak to be of service, or too strong to be borne with comfort, and in fact is not adaptable to the different widths of head of the various users. The new stethoscope having been comfortably placed in position can be instantly fixed by a slight movement of the finger. This moves the lever and locks the joint, which will remain fixed until it is desired to remove the stethoscope ; it will not then be found necessary to again touch the lever, but the upper part of the arms are seized in the usual way, the stethoscope removed, and then closed together for placing in the pocket.

A minor improvement in this stethoscope, also suggested by Dr. Herschell, consists of enlarging the orifices in the ivory ear-pieces, so that the bore of the instrument may remain in continuity with the axis of the auditory meatus during the rotatory movement round the said axis made in altering the position of the stethoscope.

Society Proceedings.

GYNÆCOLOGICAL AND OBSTETRICAL SOCIETY OF BALTIMORE.

March Meeting.

THE PRESIDENT, DR. HENRY M. WILSON, IN THE CHAIR.

DR. HOWARD A. KELLY read a paper upon the technique of the Cæsarian section, described in a series of steps, from the selection of the case down to the after treatment. The relative and absolute indication were described. The Porro operation was rejected excepting under special peculiar circumstances; for example, when there was good reason to suspect septic infection, as after prolonged efforts at delivery, at turning, or the use of the forceps, also in cases of large tumors occupying the body of the uterus, or in some cases of cancer, or in uncontrollable hemorrhage from the placental site. Thus limited, the conservative operation and the Porro operation are mutually exclusive, not occupying the same field. It is a serious surgical error to mutilate a woman by performing the Porro operation where special indications do not exist. The mortality of the Porro operation is fully as great, and probably greater, than that of the conservative. In a healthy case, free from sepsis, with unruptured membrane, it is not necessary to deliver the uterus from the abdomen before incising it and delivering the child. It is rarely necessary to use any constricting ligature around the cervical end of the uterus. Excessive hemorrhage from the placental site or the margin of the wound can very well be temporarily controlled by constricting the cervix with the hands of an assistant. The uterine suture consists of deep sutures, embracing the peritoneum and muscularia, but not the decidua. About ten such sutures are needed. Between each of these deep sutures half deep sutures can be passed, securing perfect coaptation of the peritoneal surfaces. The sero-serus sutures are not necessary in cases free from any suspicion of infection. In such clean cases, the uterus is dropped back into the abdomen and covered with the omentum. If there exists a slight suspicion,

it is of advantage to draw the omentum down behind the uterus, thus favoring the discharge of any septic material through the lower angle of the wound. Drainage of the pelvic cavity cannot be efficiently carried out. The abdominal wound must be concealed by a dressing made of snowy cotton dissolved in alcohol and ether, containing one part bichloride to 16,000. A little strip of gauze saturated with this solution is laid over the wound. This adheres until it is time to take the sutures out, concealing the wound, and preventing contamination from the outside much better than many layers of gauze and cotton. The baby should be allowed to nurse as soon as the mother has thoroughly recovered from the anæsthetic. The vagina should not be douched out as a matter of routine. The vaginal outlet should be secured from the introduction of sepsis from without by separating the labia and throwing into the vulvar orifice a drachm of powdered iodoform and boric acid (1 to 7). A cotton pad loosely applied to the vulvus should be changed as often as soiled by the discharges. The patient thus passes through a perfectly normal puerperium.

Dr. Chas. P. Noble—In the technique of the operation laid down by Dr. Kelly, reference has been made to typical cases. In such cases I agree entirely with what he has said. But all cases are not typical. I will report an unique case upon which I did the Cæsarian section recently. Dr. Kelly had operated in a previous pregnancy. As a result of the first operation there remained a fistular opening from the uterine cavity through the abdominal wall. Notwithstanding this fistula she became pregnant, and for several weeks the amniotic bag protruded into the opening, so that there was nothing between the fœtus and the outer world but the thin amniotic sac. This sac ruptured at the thirty-third week. The woman had a generally contracted pelvis, besides having a large mass of fibrous tissue behind the cervix, left from her previous Cæsarian labor. Had spontaneous labor been possible, the fœtus would have escaped through the fistula and not per vaginam. In view of the conditions, I thought Cæsarian section preferable to delivering the mutilated fœtus *per vias naturales*. The finger was inserted into the uterus

through the fistula, and with this as a guide the incision was made through the region of utero-abdominal. Sufficient room not being afforded for delivery, the peritoneal cavity was opened and the uterine incision lengthened. The living fœtus was then delivered. The placenta and membranes were firmly adherent, and were slowly peeled off. To control bleeding during this time it was necessary to insert the uterus through the abdominal incision to enable the assistant to grasp the lower segment. The patient passed through a perfectly normal puerperium, and is now quite well and soundly healed. This case is entirely unique in its conditions and in the technique of the operation. Three cases of Cæsarian section have been observed by me, all having made good recoveries. When the operation is done at the proper time, and after the method described by Dr. Kelly, I am sure this result will be quite uniform. The essentials of success are : 1. Operation at the proper time, before labor or at the beginning of labor. 2. Rapidity in operating. 3. Accurate suturing. 4. Asepsis. With reference to suturing, I believe that the Lembert suture as ordinarily described is purely theoretical. The peritoneum will not hold a suture. Operators have unconsciously included the deeper tissues in the so-called Lembert suture. An important point not generally recognized in this country is, that the diagnosis should be made in the last weeks of pregnancy, and under ordinary circumstances the operation be decided upon and done at the close of pregnancy, before labor sets in or immediately thereafter. I would not do the modern Cæsarian section in a case which had been tampered with by efforts to deliver with the forceps or by version ; but in such cases would prefer the operation. In Philadelphia in the last four years twelve Cæsarian sections have been done, and ten mothers have recovered. One that died had pneumonia at the time of the operation. The other case was one in which the surgeon at the same time removed a fibroid tumor.

Dr. B. B. Browne—I think all the procedures recommended are in the main correct, and are in accordance with the rules and suggestions laid down five or six years ago by Garrigues, Sänger and Leopold ; these should be carried out in ideal cases,

but, unfortunately, we meet with many complications which must be dealt with as they occur. Having recently performed the operation myself, and looked up the literature and technique of the subject, I was surprised to find that we can to-day make but little improvement or change for the better. In 1886 Sänger had operated four times, saving all the women and children. Dr. Leopold had operated nine times and lost one woman, saving all the children.

Dr. T. A. Ashby—I wish to congratulate Dr. Kelly on his brilliant success with the Cæsarian section. This success is convincing proof of what can be done when the section is instituted under proper conditions and at a proper time. The future of the operation rests upon a proper and judicious selection of the case, and upon an immediate resort to the section before other methods of delivery have been attempted and abandoned. I doubt whether the Cæsarian section under such conditions will give a higher mortality than the ovariotomy of ten or fifteen years ago. The technique of the section is simple enough, and certainly its mechanical execution is not as difficult as that necessitated in the removal of many conditions of tubal and ovarian disease. Hemorrhage is not large and it is easily controlled. Septic processes should not follow if strict aseptic precautions are observed. The progress of the section as a substitute for other methods of delivery rests upon an early and clear recognition of the pelvic measurements and a prompt acceptance of this method as the proper procedure in the given case. When this is done, the success of the section is not compromised by unfortunate interference in other directions. When we have obtained the statistics of this class of cases, we are in a position to compare the mortality of the section with other operative methods.

Dr. N. P. Chunn—I did not hear the first part of the history of the case, but I think I would have removed the ovaries or tied the Fallopian tubes to prevent future conception. It is hard to say just what operation should be done.

Dr. Noble—In doing a Cæsarian section, I would not touch the ovaries and tubes as Dr. Chunn speaks of doing, but would

do nothing to prolong the operation. Tying of the tubes would probably cause salpingitis. This objection is purely theoretical. So far as I know, this has been done only twice—once in England and once in America.

Dr. Brinton—I have been for some years interested in measuring the pelves of women. Very often we go to labor cases without knowing anything about the condition of the pelvis. With the hospital surgeon who has the best facilities, the Cæsarian operation will undoubtedly be the best in cases of extreme pelvic contraction. But with the average practitioner what is best? I think that with these physicians craniotomy will hold the place. In speaking of craniotomy "holding its place," I refer to those cases of pelvic contraction where the child could be extracted without harm to the mother, say from $1\frac{3}{4}$ to 3 inches.

Dr. T. A. Ashby—I must offer an apology for presenting a series of experiences which are familiar to all who have done much intra-abdominal work. I have brought these charred remnants of tubal and ovarian inflammation before the Society to invite discussion, not to exhibit anything original. They present nearly every phase of intra-pelvic inflammations, and illustrate the various degenerative conditions which are found in the pelvis after an inflammatory fire has passed over these tissues. Of the nine specimens here presented, removed from the same number of cases, no two are alike. In one case the tube has received the brunt of the attack; in another the ovary is involved in abscess cavities, whilst in a third both tube and ovary are tied up in a knot by adhesive inflammation, and so on through the series. The clinical histories of these cases would be exceedingly interesting did time admit of a recital, but I shall not tax your patience with details. We have the same old story in all of these cases save two—one, the large specimen of a tubal sac of uncertain origin, probably an interrupted tubal pregnancy of long standing; and the other the remnants of a catarrhal salpingitis and ovaritis with intra-pelvic adhesions. Of the other seven specimens the origin of the condition is of chief interest in this connection, since they explain to my mind the essential factor in the production of the specimen here presented. Each

of these women have borne one or more children ; in each case the history of the intra-pelvic trouble dates from the last lying-in period, which was accompanied with mild or severe symptoms of child-bed fever. In each of these women there was an old lacerated cervix, in some more pronounced than in others. The histories of these cases, as far as they can be made out and can be interpreted, tell the simple story. During labor a cervical tear occurred ; in this wound septic material gained a lodgment ; a septic process was established, which extended from the cervix to the cavity, from the cavity to the tubes, and from the tubes to the intra-pelvic peritoneum. The severity of the symptoms in each case must have bore some relation to the septic process and to the tissues involved, though no way is offered for verifying this statement. We simply find the results in general destruction of the tube or ovary, or of both, and the inference is that drainage was secured and pus escaped, leaving no remnants of this character behind, except in two of the specimens, in which I found pus cavities in the ovary containing each a drachm or more of pus. These cases illustrate the fearful havoc which a septic process following parturition may occasion among the pelvic organs. " A little fire kindleth a mighty conflagration " is literally true in more respects than one. In an experience with other cases I have observed this septic process in its very beginning when limited to the cervix and cavity, and I have seen the lying-in woman's temperature fall from 103° to normal within twelve hours after thoroughly cleansing and disinfection of the cervix end cavity in these cases, and a complete arrest of the process before the tubes were involved. In another case I have seen tubal and general pelvic-peritonitis in active force following immediately the infection in the cervix and cavity. This experience convinces me, despite all other theoretical teachings, that we have in the lying-in state an explanation of those intra-pelvic diseases which render the lives of so many women useless and oftentimes utterly miserable. Now is it necessary that the lying-in period should be surrounded with extra-hazard, high temperature, and severe pain. A septic endometritis following parturition may run a very mild and low grade course,

and still result in subinvolution, salpingitis, pelvic adhesions, and other intro-pelvic conditions which impair the normal function of these organs. The lesson clearly taught by such experience is that aseptic conditions should be enforced in every case of labor, that the least suspicion of sepsis should lead to immediate investigation of the uterine cervix and cavity with a view to thorough cleaning and arrest of the septic process. If this be done, as I have done it in a number of cases seen with medical friends in consultation, we can cut short a sepsis and arrest a condition which will surely extend to the tubes and pelvic peritoneum in the absence of prompt attention.

Dr. B. B. Brown—The fact that laceration of the cervix is so frequently found in married women suffering from tubal disease is, I think, because the purulent discharge from the uterus passing over the torn surfaces prevents their union, while the septic material also extends to the tubes; when there is no septic material in the uterus the lacerated surfaces readily unite and the tubes are not affected.

Dr. J. Whitridge Williams—The specimens exhibited represent a class of cases that are very common, and which will become more so as we become more expert in bimanual examination. Indeed, to a skilful palpator, it almost seems that the majority of women examined have, more or less, tubal or ovarian disease. The specimens are particularly interesting to me, because I have studied carefully the pathology of a large number of similar cases. The etiology in many cases is doubtful, but most observers appear to cling to Noegerath's theory of latent gonorrhœa. Examination of the pus in cases of pyosalpinx brings forward most interesting facts. For in most cases it is impossible to discover any species of bacteria either under the microscope or by culture methods, which shows that the bacteria which caused the trouble have long since died, for closed pus cavities are not particularly favorable for the growth of organisms. In two cases we found undoubted gonococci, and in a case following an imperfect abortion the streptococcus, and in another case the staphylococcus aurens. Clinically, the cases due to the pus organisms are much more acute and virulent than those due to

the gonococcus. These results correspond with those of Zwerfel of Leipzig, who has just published his observations. He also found the gono- and streptococcus, but not the staphylococcus. In one of his streptococcus cases the subject was an undoubted virgin, and he accounted for the infection by an abscess following an attack of typhoid fever some years before. Dr. Ashby speaks of the relation of lacerated cervix to salpingitis, etc. I cannot consider it a factor in the production of the disease, and regard it merely as a coincidence. If it were a potent factor in producing the trouble we should find salpingitis and pelvic adhesions far more frequently than we do now; for we must remember that in most women there is more or less laceration of the cervix during labor. Moreover, this cause is certainly inapplicable to the frequent cases occurring in multiparous women, and especially in virgins. A close study of the clinical history of a number of cases inclines me to believe that the majority of cases follow infection during labor or after an incomplete abortion; for in many cases it is impossible to obtain even a history of leucorrhœa before the labor, which would apparently exclude gonorrhœal infection. By infection during child-birth I do not necessarily mean the cases in which we have well-marked puerperal fever, but the milder degrees of infection as well; for most of the cases of so-called milk-fever are due to infection and may give rise to serious results. Zwerfel, on the contrary, who has just published a remarkable series of 79 salpingo-oöphorectomies, with only one death, believes in the gonorrhœal origin of most cases. Sänger traces most of the cases in virgins back to a gonorrhœal salpingitis during childhood, which has persisted and ultimately affected the Fallopian tubes. While I do not feel justified in subscribing to this view, I can say that it is quite probable. For lately I have seen a number of cases of undoubted gonorrhœa in little girls of from two to seven years of age in which there was no suspicion of criminal action. In eight cases of vaginitis in little girls which I have examined, I found gonococci in six of them. In several, the mode of infection was quite clear. In one case the husband acknowledged an attack of gonorrhœa with which he infected his wife during her pregnancy,

and each of the children born after it had ophthalmic neonatorum, followed, when they were older, by gonorrhœal vaginitis. In another case, an older brother had gonorrhœa and his two little sisters used his towels for bathing. These remarks will show that the vaginitis of little children is not of strumous origin, as generally supposed, and that it demands a more active treatment than is generally employed; especially when we consider its possible consequences.

Dr. Brinton—I can corroborate the views of Dr. Williams in regard to the specific origin of the cases of vaginitis in children. Having recently treated first the father with gonorrhœa, later the mother, and within a fortnight from the time the father consulted me was called to see the little daughter, aged four, with a severe "vaginitis," which yielded to the usual treatment in about the usual time. My experience has been that if a child is found with a "vaginitis," close investigation will prove that some older member of the family has either a "urethral" or "vaginal" discharge.

Dr. Noble—Dr. Ashby has brought up so many points that it is difficult to know just what to take up. It is now the fashion to call all unilateral collections of blood extrauterine pregnancies. But I have recently had a case that proved not to be a pregnancy. With reference to the uterine hemorrhage coming from the tubes, we do know as a fact that it is possible for blood to come from the tubes. This was common to all in the days when the stump was treated by the extra-peritoneal method in doing ovariotomy. I am quite sure that gonorrhœa has been the cause of most of the cases of pyosalpinx that I have seen; and I think that the cause of salpingitis in young women is often from a simple infection. Many cases of dysmenorrhœa in young women are due to salpingitis. In such cases it is unnecessary to question their chastity. I agree with all the speakers in reference to the relation of lacerated cervix to salpingitis. Where there is a laceration there is frequently an endometritis, and there is no reason to think that it may not follow out into the tube. I believe firmly in the great value of the drainage tube; and use it in almost every case. When properly cared for it is practically

free from objection, while being of most positive advantage in allowing the escape of serum and blood.

Dr. H. P. C. Wilson—I did an exploratory laparotomy for a fibro-cystic tumor. In manipulation I found great tendency to bleeding, and as I could not get at the ovaries nor remove the tumor without causing death, I closed the abdomen. She got on well for fourteen hours, when she became very feeble, heart and respiration very weak. She was put upon digitalis and muriate of quinine and urea, but it did no good. The heart became so weak that the pulse could not be felt. I then began with five minims of tincture of strophanthus every three hours, and ether ♏ xx hypodermically every three hours. The pulse became stronger (125 to the minute), and she felt better. The next day she became unconscious, pupils dilated, face flushed, pulse 120, temperature normal. The medicine was withdrawn, but she remained in this condition about twenty-four hours. To-day she is better, consciousness returning, pupils contracting. I have had no experience with the poisonous effects of strophanthus.

MEDICO-CHIRURGICAL SOCIETY OF MONTREAL.

Stated Meeting, April, 3rd, 1891.

F. J. Shepherd, M.D., President, in the Chair.

Dr. Lapthorn Smith exhibited the following pathological specimens:—

1. *Small Cystic Ovary.*—The patient had been a sufferer for many years with pain in the left side and severe palpitation. Dr. Smith had tried every form of treatment without being able to give her any relief. He then concluded to operate. The appendages were removed, with the result of immediate improvement of her symptoms—the pain disappeared, and she was free from attacks of palpitation.

2. *Double Pyosalpinx.*—This patient was aged 33, married twelve years, and the mother of one full-grown child eleven years ago. Her labor had been difficult, and she had been in bad health ever since. She had recurring attacks of pelvic peri-

tonitis yearly for the past ten years. For the last two years her menstruation had been profuse. On examination, the ovaries and tubes were felt bound down in Douglas' cul-de-sac, and were excessively tender. Removal of the appendages had been advised, and the operation was performed by Dr. Smith, assisted by Dr. Armstrong. The tubes, which were exhibited, were enormously distended with pus. Up to the present time the patient was doing favorably. Dwelling upon the causation, Dr. Smith mentioned the probability of a septic metritis and salpingitis following her confinement eleven years ago. The recurring attacks of pelvic peritonitis could be attributed to the oozing out into the pelvic peritoneum of the pent-up pus in the over-distended tubes.

Dr. Shepherd exhibited the following

ANATOMICAL VARIATIONS.

1. *The left fore-foot of a pig with six toes.*—The reproduction of the thumb was interesting, for the trapezium, which in the pig's foot is in a rudimentary condition, was here developed to its full size. In both the accessory toes there were three phalanges, thus differing from the ordinary first digit of the five-toed mammals with only two phalanges.

2. *An unciform bone* with the unciform process separate and evidently having an origin from a distinct centre, as there were no evidences of fracture.

3. *An Indian skull* with a well-developed supra-occipital or rather inter-parietal bone, as is seen in many lower animals. The portion of bone above the superior curved line was separated from the rest by a suture running across from one lateral angle to the other.

New Methods in the Treatment of Granular Ophthalmia.—Dr. F. Buller followed with a paper of considerable interest on the above subject. (This paper appeared in the May number of this Journal.)

Discussion.—Dr. Foucher considered Dr. Buller's paper of interest to all, as it related to one of the severest diseases connected with the eye commonly met with. Before such remedies mentioned by Dr. Buller were adopted, cases presenting them-

selves for treatment in our hospitals increased in numbers owing to the inefficient methods then at the disposal of the specialist. The susceptibility of some individuals to trachoma more than others was difficult to explain. He had frequently noticed granular lids in patients with atrophic rhinitis. Was there any connection between these two diseases which somewhat resembled one another pathologically? Did tuberculosis predispose to granular ophthalmia? In the treatment he considered jequirity of great value, as well as corrosive sublimate, in suitable cases.

Dr. Proudfoot had discontinued the use of inoculating with pus cases of granular ophthalmia since the introduction of jequirity. He has been in the habit of using the freshly powdered bean. If within forty-eight hours there was no inflammation, he washed out the sac. He had also employed caustic potash with great care, neutralizing the effect with a weak solution of vinegar. He found corrosive sublimate in the strength of 1 to 5000 beneficial when used frequently.

Dr. Shepherd asked if sulphur had been tried in those cases where corrosive sublimate failed. It was known to act well in diseases of the skin.

Dr. Buller, in his reply, remarked that he saw no analogy between tuberculosis and trachoma. That trachoma was due to a specific diplococcus, cultures of which had been found to produce the disease. He was not aware that sulphur had been used in these cases. He considered scarification very valuable in recent cases with much swelling.

Stated Meeting, April 17th, 1891.

F. J. Shepherd, M.D., President in the Chair.

Chronic Ovaritis in Cases with unusual Nervous Symptoms.—Dr. Alloway showed specimens from three cases of chronic ovaritis. The ovaries and tubes exhibited were removed for the relief of unusual nervous symptoms. The first case was 30 years of age; three full-term children; menstruation had been very irregular. A year previous she had a trachelorrhaphy performed for laceration of the cervix, which improved her in general health

for some months; but the following nervous symptoms remained and continued to become exaggerated: constant headache, vertigo, exaggerated hysterical symptoms, chiefly in the form of a feeling of irresponsibility for her acts, great cardiac excitability, insomnia, and pelvic pain. Since the removal of the appendages these symptoms have disappeared, and the patient has assumed altogether a different condition.

The next specimen exhibited by Dr. Alloway was the appendages removed from a lady 40 years of age. She had been married twenty-one years. Four full-term children; youngest 14 years of age. Menstruation had been very irregular, severe pelvic pain, constant vomiting, which seemed to be of a reflex character and unaccompanied by nausea, constant headache, hysterical attacks were very violent, requiring severe measures to suppress them, and were followed by these attacks of vomiting before mentioned. This patient had been under every possible treatment for years without relief. At the operation, the ovaries and tubes of both sides were firmly adherent to the pelvic wall, and were with much difficulty separated on account of the age of the adhesions. This patient has not had a single attack of vomiting since the operation, and in other respects is thoroughly restored to health.

The third specimen exhibited by Dr. Alloway was the appendages from a patient of 29 years of age, unmarried. Her principal symptoms consisted in an inability to digest ordinary food for the past two years, the smallest quantity causing intense gastralgia, followed by painful and loud eructations of gas and enormous distension of the large and small intestines, giving appearance to the so-called phantom tumor. This tumor would gradually disappear towards evening, to reappear again the following morning accompanied by very loud borborygmus. This patient had had every possible form of treatment, including the washing out of her stomach; had lived on milk diet for months at a time without any benefit. The appendages were removed and found extremely small and cirrhotic; they were formed of unruptured cysts and fibrous tissue. Since the operation this patient has had no distension of the abdomen nor dyspeptic

attacks. She takes ordinary food without any inconvenience, and has no hysterical symptoms whatsoever.

Dr. Alloway said that he exhibited these specimens to show that hysterical symptoms accompanied by reflex phenomena relating to disease of other organs were really due to organic disease of the sexual organs; and that chronic ovaritis, due to past attacks of scarlet fever or smallpox, was invariably found on operation. This variety of disease was called by Tait exanthematic ovaritis, and was more prevalent than the profession generally suspected.

Uterine Fibroid Removed by Abdominal Hysterectomy.—Dr. Lapthorn Smith showed this specimen, which was about the size of the head of a new-born child. He said that he had performed this operation with great reluctance and only at the urgent solicitation of the patient and her friends. She was 35 years old, and had always had regular menstruation, but four years ago she had begun to flow profusely, and her periods became extended to fourteen days, gradually growing more and more profuse until she had to be tamponed and confined to bed. About two years ago she had ten applications of electricity in Minneapolis, according to Apostoli's method, but owing to her intolerance of it and the impossibility of introducing the platinum sound through the several sharp curves of the uterine canal she only received very small intensities, and the benefit was in proportion. She was, however, so much improved (losing about half as much blood and for about half the length of time that she did previously), that she returned to her arduous duties as principal of a school. After a winter's work she began to suffer again from dysmenorrhœa and menorrhagia, and when she placed herself under his care last fall she was losing for fourteen days every month. He was unable to introduce a platinum sound, and was obliged to invent an instrument for her case—namely, a soft elastic bougie covered with aluminium wire—which he was able to introduce a distance of $4\frac{1}{2}$ inches, and by means of which he was able to go as high as 100 mm. She improved so much after fifty applications that the flow was only profuse for two days, and was over in five or six. She then went down to New

Brunswick on a visit, where the periods continued to be less and less, and when she returned to Montreal a week ago she appeared in perfect health. Although all the cases which have improved under Apostoli's treatment had maintained their improvement, some after several years, yet Dr. Smith, on being asked, could not promise his patient that this would be the case with her. He advised her to return home, and if her improvement should not prove to be permanent, to return for operation next summer. The patient, dreading a return, requested that an operation should be performed immediately. Dr. Smith informed her that the only operation which would guarantee her against a return of the bleeding was a radical one—namely, the removal of the tumor with the uterus and its appendages, which he considered very little more dangerous than the removal of the appendages alone. Five days ago, with the assistance of Dr. Armstrong and of Dr. Spendlove (who gave the anæsthetic), he performed abdominal hysterectomy, removing the whole of the tumor and all of the uterus and appendages except a piece of the cervix, which was left for a stump. In order to lift the tumor out of the very small opening which he purposely made, he screwed into it a silver-plated cork-screw, which enabled Dr. Armstrong to lift it out without any effort. So far the temperature has not reached 100°, the only *contre-temps* being the oozing of about eight ounces of blood from the stump owing to the serre-nœud having gone to the end of its tether, so that he was obliged to place another serre-nœud around the first, which arrested the oozing. The stump came away on the fourteenth day, and there was every prospect of her making a good recovery.

Dr. Armstrong, dwelling upon reflex symptoms mentioned in Dr. Alloway's cases, considered that removal of the distal cause, when practicable, would necessarily tend to alleviation of the symptoms. Referring to hysterectomy, he questioned the propriety of submitting a woman to hysterectomy in cases where removal of the appendages would give relief. In the former the mortality was high, whereas in the latter the death-rate was low.

Dr. Mills said that the sexual organs played a great part in

reflex symptoms. The removal of the ovaries or testicles in an animal arrested its development. The moral, mental and even the physical life changed. In man these changes were not so marked, yet we had sufficient evidence to show that a centre could be, as it were, thrown out of balance by over-stimulation of an afferent nerve, whereby the physical life became disorganized. He hoped that gynæcologists and obstetricians would be able to trace out the paths of these disturbances.

Dr. Alloway thought that the appendages in Dr. Smith's case might have been removed for a tumor of the size mentioned. He was of the same opinion as Tait in not performing hysterectomy when the appendages could be removed, which could be done in the majority of cases.

Necrosis of the Bladder.—Dr. F. A. L. Lockhart followed with a paper on this subject, which will appear in the next number of this Journal.

Dr. Johnston had been interested in reading an article on the above subject from Dr. Haultain of Edinburgh. He was not inclined to consider this a special form of necrosis of the bladder in contradistinction to other diseases of the bladder, such as diphtheria and cystitis, which are also a kind of necrosis.

Stated Meeting, May 1st, 1891.

F. J. Shepherd, M.D., President, in the Chair.

Dr. G. G. Campbell was elected a member of the Society.

Multiple Epithelioma of Œsophagus and Stomach.—Dr. Johnston exhibited this specimen, which had been obtained at the autopsy from a patient who had recently died in the hospital. It was a very unusual condition. Two epitheliomata were found high up in the œsophagus, whilst within the stomach, close to the œsophageal opening, was another tumor. The liver contained two large tumor masses and two smaller ones; the former were broken down in the centre. They differed in their microscopical appearances from those found in the œsophagus and stomach. The cells were not arranged in nests, but in alveoli. It was very difficult to say which was the primary tumor. But few of these cases had been reported.

Brain Tumor.—Dr. Johnston showed this specimen for Dr. Stewart. The growth was situated at the base of the brain, and occupied the position of the pituitary body, involving the optic nerves and optic commissure. The lateral ventricles were considerably distended, and covered with minute granulations produced by a thickening of the lining membrane from chronic distension. The tumor extended into the third ventricle. There were considerable areas of necrosis and fatty degeneration. From the microscopical appearances, the growth was pronounced a teratoid tumor, not uncommon in that region.

Dr. James Stewart remarked that the patient, whom he had seen, had been admitted to the hospital under Dr. Buller. He complained of failing vision, severe headaches, vertigo, and vomiting. There was double optic neuritis, which went on to complete blindness. He had ptosis of the right lid, and the head inclined to the right side. There was no history of syphilis. The symptoms were those of a gross lesion in the brain. Nothing pointed to the localization or nature of the tumor.

Cardiac Thrombus in a Case of Pneumonia.—Dr. Finley related that the patient from whom this specimen had been obtained was a man, 46 years of age, who, in 1889, had had a pleurisy which had lasted six weeks. On the 7th February of this year the patient was taken ill with pneumonia. The fever disappeared on the tenth day, and he was apparently progressing favorably. A week later the patient was seized with a malarial-like attack. The chills were of a marked intermittent type, recurring at intervals of twenty-five hours. He had never had malaria, and had not lived in a malarial district. Dr. Finley was at a loss to explain their cause. The patient died from heart failure on 23rd March. At the post-mortem examination the right pleura was found greatly thickened. There was a localized pleurisy, with some effusion at the base of the right lung; the lung itself was in a condition of resolving pneumonia. Fraenkel's micrococcus of pneumonia was found. The examination of the heart was interesting from the presence of a large thrombus in the right side of the heart, which projected upward into the auricle; the valves beneath were perfectly healthy. Sections of the thrombus were made, but no bacteria were found.

Dr. Geo. Ross remarked that he had seen the patient on two occasions. At his first visit he had found him in one of those rigors mentioned by Dr. Finley, which was very violent, and very much like the chill of ague. At his next visit the patient was apparently well, pulse quiet, and temperature normal. There were physical signs of consolidation at the base of the right lung. The appearance of the ague-like attacks at a time when the patient should be recovering from pneumonia was very perplexing. The possibility of its being accounted for by septicæmia was negatived by his good condition in the intervals. Malignant or ulcerative endocarditis, which has often been mistaken for ague, could also be excluded from the absence of a heart murmur. It was difficult to offer an explanation.

Ulcerative Endocarditis.—Dr. F. R. England, who reported the case, remarked that the patient, a man aged 36, employed as a locomotive engineer, had been in good health until two and a half years ago, when he suffered from an attack of articular rheumatism with endocarditis, which kept him in bed for four weeks. There was at that time a soft blowing murmur transmitted down the sternum and upwards along the vessels into the neck. He recovered and remained well until the winter of 1890, when he suffered from a dry, harsh cough, which disappeared in the spring. The cough returned again last winter, and impaired his health considerably; he lost weight and complained of night sweats. The loss of a child about this time preyed heavily upon his mind. He persisted in going to his work until the 10th of March, when Dr. E. was called to see him. He complained of cough, great weakness, and pain in the left lumbar region on deep inspiration or movement. His temperature was 101°F.; pulse quickened. There were no evidences of disease in the heart or lungs. For six days of the illness the temperature ranged between 100° and 101°. The nervous prostration, the profuse sweats, together with the persistence and severity of the lumbar pain, lead Dr. England to believe that the trouble was probably rheumatic. After the tenth day of the illness a harsh, double aortic murmur developed, with visible pulsation of the head and neck and smaller arteries. A congestive bronchitis appeared, and the patient became weaker and restless. The

temperature varied between 99° and 101° ; respirations 36 to 46, and pulse from 96 to 120 throughout the disease. No palpitation, or pain over the cardiac region, was at any time complained of. There were no rigors. Rheumatic pain and tenderness developed in the right shoulder, lasting for a few days. The patient died suddenly from heart failure on the forty-fourth day of his illness. Dr. Geo. Ross, who had seen the patient in consultation ten days before death, was strongly inclined to consider the case as one of malignant endocarditis.

Dr. Johnston, who exhibited the specimen for Dr. England, said the heart showed extensive acute endocarditis of three segments of the aortic valves, with large vegetations upon their free edges. Besides the recent endocarditis, the valves showed signs of old chronic endocarditis. Fusion of two of the segments of the valves had occurred, which was not uncommon in ulcerative endocarditis. A perforation was noticed directly in the middle of a segment with complete destruction of valve tissue at that point. The perforation was plugged with fibrin which prevented any leakage when water was poured upon the valves. This, Dr. Johnston suggested, might explain in some cases the disappearance of a murmur. The streptococcus pyogenes was found.

Dr. Geo. Ross considered the case of clinical interest. The prostration noticeable in this malignant disease was an important point. Another point was the different phases in the temperature curve ; few diseases were so deceptive in regard to the temperature curve. Dr. England's report places another case on record where a heart already the subject of endocarditis subsequently becomes the subject of ulcerative endocarditis.

The Bacilli of Diphtheria.—Dr. Wyatt Johnston exhibited cultures of the Klebs-Lœffler bacilli obtained from a case of diphtheria. The bacteriological examination of the diphtheritic membrane, as recommended by Roux and Yersin, was likely to prove of great practical diagnostic value in doubtful cases, as a positive diagnosis was possible within twenty-four hours. The appearance of the bacteria and their mode of growth were quite characteristic. Portions of membrane intended for examination could be sent dry in clean glass or between folds of blotting paper or cotton. In three cases of genuine diphtheria these

characteristic bacilli were found in large numbers, while two other cases with a suspicious-looking exudation on the tonsils were free from them, and proved to be simple cases of tonsillitis. One case where a peculiar fibrinous false membrane had formed in the nose, and a case of membranous conjunctivitis, were free from the diphtheritic organisms. Dr. T. M. Prudden's experience with what seemed to be cases of genuine diphtheria, where the bacilli were uniformly absent, was unique, and not borne out by his later results. It was probable that a certain proportion of primary acute inflammations of the throat, characterized by the presence of what was anatomically diphtheritic membrane, was due simply to septic organisms, such as the streptococcus pyogenes.

Discussion.—Dr. A. D. Blackader had translated (some twelve months ago) an article on this important subject from *Le Journal de L'Enfance.* He had been surprised at the results obtained by Prudden on his first investigation for the Klebs-Lœffler bacillus. It was evidently the ptomaines which produced the poisonous effects.

Dr. Geo. Ross remarked that it was of great importance in doubtful cases to arrive at just conclusions. From recent work more than one disease was shown to be characterized by the formation of membrane. In two cases which had recently come under his notice in the General Hospital, one was a young child with a suspicious-looking follicular tonsillitis which was examined for the Lœffler bacillus, but none were found; the other case was admitted for quinsy, and when first seen by him the patient had had rigors and complained of severe pain at the angle of the jaw, with difficulty of swallowing. The tonsils were considerably swollen, and a suspicious, small fibrous patch was noticed on the side of the uvula. The next day the patch had extended, and he felt quite sure that the case was one of diphtheria. Dr. Johnston took a culture from the patient's throat, which showed the Lœffler bacillus abundantly. The most extravagant views were held upon the subject of diphtheria. Dr. Jacobi looked upon all cases of tonsillitis as diphtheria. The only way that such views can be positively disproved, will be by bacteriological examination.

Dr. Buller remarked that when true diphtheria attacked the conjunctiva, the local symptoms were very severe, and always sufficiently well marked to make easy the elimination of other diseases characterized by the formation of false membrane.

Dr. Birkett stated that a case which had come under his notice, and which had been mentioned in Dr. Johnston's report, had somewhat of a diphtheritic appearance. A yellowish, thick, pseudo-membrane was found loosely attached to the septum of the nose, which, however, could be removed without bleeding. The larynx presented a similar condition, and the tonsils were swollen. The patient eventually got well three weeks after, before the membrane disappeared from the cords. The Klebs-Lœffler bacillus was not found.

Dr. Wilkins referred to the difficulty, at times, in the diagnosis of follicular tonsillitis from diphtheria, and *vice versâ*. A case which he had lately seen presented all the appearances and symptoms of a follicular tonsillitis, which he would have pronounced as such but for a small suspicious patch on the side of the uvula. The case proved to be one of diphtheria.

Dr. England mentioned a case of a child whom he had seen with a temperature of 101°F., glands swollen at the angles of the jaw, and both tonsils covered with white membrane. The case looked very much like diphtheria. In three days the membrane had all disappeared and the child was better. Another child in the same family was similarly affected, but in this case a large cervical abscess formed. The mother of these children was also taken ill shortly afterwards; membrane appeared on both tonsils, temperature rose to 101°F., and she was considerably prostrated. He questioned whether these were cases of true diphtheria, and was more inclined to consider them cases of septic sore throat, as mentioned by Dr. Johnston.

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THE TREATMENT OF PNEUMONIA.

A recent number of *The Lancet* contains an important contribution to the treatment of pneumonia by Dr. W. S. Fenwick of London. This paper is based on an analysis of one thousand cases of pneumonia treated in the London Hospital during the decade ending 1890. In the above list no case was included that had not been twenty-four hours and upwards in the hospital before a crisis or death occurred.

Dr. Fenwick divides his cases into two great groups—the sthenic and asthenic. The sthenic cases, five hundred and two in number, were treated according to the following methods:

1. A certain number were treated with hot applications to the chest, combined with the administration of various expectorant and tonic remedies.

2. A number of cases where large doses of quinine was the only treatment.

3. Cases where the treatment was carried out by the employment of general antipyretic measures.

In the first two classes the mortality exceeded twenty per cent. In the third class various antipyretic measures were used. In twenty-six cases, where the treatment consisted of cold applications to the chest, the mortality was about fifteen per cent. The cold pack was used in twenty-six cases with a like mortality. Cold sponging was used in sixty-five cases, with a mortality of about thirteen per cent. The ice cradle was made use of in forty-three cases, with a mortality of seven per cent. Taken altogether, there were one hundred and eight cases treated by the application of cold in various ways, with a mortality of ten

per cent. The mortality by the other methods being more than double that by the cold treatment. With the latter treatment, it should be mentioned that stimulants were also usually given.

In spite of the very considerable number of cases analyzed by the author, it would be unwise to place too much confidence in the apparent teachings. We know how fallacious the results of statistics may prove to be; it is therefore wise to be very guarded in accepting broad and definite conclusions founded on this evidence. The success of the "cold" treatment of other febrile and infectious diseases—especially in typhoid fever—has been proven beyond all manner of doubt. There is nothing improbable, therefore, in the statement that cold applications is the best treatment for pneumonia. Death in pneumonia is nearly always brought about by heart failure, and in the treatment of this disease it is of paramount importance to keep this in mind. We have always looked upon the treatment of pneumonia with cardiac depressants as being fundamentally wrong. In place of strengthening the citadel, we are by the employment of these agents undermining it.

In a superficial, theoretical sense there is something captivating in the idea that during the early stages of a pneumonia cardiac depressants should be used, while in the advanced stages these should be replaced by agents of an opposite class.

When we, however, consider the stern fact that death is owing to heart failure, we should have abundant proof that cardiac depressants (tartar emetic, veratrum, aconite, etc.) have an indirect effect in limiting the extent and severity of the inflammatory process. Have we undoubted proofs that they accomplish this? We believe we have not. It appears to us that the true treatment of pneumonia consists, in the early stages, of measures which reduce the temperature, while at the same time there is no depressant effect on the heart. Of all antipyretics, cold is the most efficient. The employment of quinine, antipyrine, etc., is open to the same objection as are tartar emetic, aconite, etc. They act as cardiac depressants. In the final stages of the disease, the state of the pulse is the index for treatment. In many cases, camphor, digitalis and alcoholic stimulants are not required, but their judicious use in threatened

heart failure is of the greatest importance. Dr. Fenwick shows that very particular dangers attend the period of crisis, it is therefore very necessary to guard the patient at this period by the use of those agents mentioned.

Medical Items.

—Dr. Geo. E. Armstrong has been appointed Instructor in Surgery in McGill University.

—Dr. Henri A. Lafleur has been appointed Instructor in Medicine in McGill University.

—Dr. John Elder has been appointed Assistant Demonstrator of Anatomy in McGill University.

—Dr. R. E. McKechnie has been appointed assistant to the Lecturer on Histology in McGill University.

—Dr. D. J. Evans has been appointed Medical Superintendent of the Montreal General Hospital.

—Dr. George E. Armstrong has been appointed Surgeon to the Montreal General Hospital, *vice* Dr. Geo. E. Fenwick resigned.

—Dr. R. C. Kirkpatrick has been appointed Assistant Surgeon to the Montreal General Hospital, *vice* Dr. Geo. E. Armstrong appointed surgeon.

—Dr. Mader (McGill, '91) has been appointed House Surgeon, after a competitive examination, to the Victoria General Hospital, Halifax.

—Dr. Hattie (McGill, '91) has been appointed to a position on the medical staff of the Nova Scotia Hospital for the Insane at Dartmouth.

—We have received several numbers of a very useful and ably conducted journal called *The Bacteriological World.* It is edited by Dr. Paul Paquin, the director of the Bacteriological Laboratory of the Missouri State University at Columbia, Missouri. It is a monthly periodical, the subscription being $3.00 per annum.

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